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Advisor: Prof. Antonio MARRA

Co-Advisor: Prof. Claudia IMPERATORE

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Adriano SALERNO

ID number: 3002667

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ABSTRACT

This thesis examines the determinants and consequences of payout policy choices and their related disclosures. In the first chapter, I exploit a unique setting related to retail dividend investors to examine whether managers adjust voluntary disclosure choices in response to firms' inclusion in stock screeners (i.e., digital tools used by retail investors to filter securities). While retail investors are increasingly important in capital markets, managers face significant challenges in engaging their desired retail investor base due to retail investors' awareness costs. The inclusion in popular stock screeners can alleviate this engagement friction by increasing the firm's visibility and the likelihood that retail investors will process the firm's disclosure. I exploit the launch and subsequent expansion of the first freely accessible and highly influential dividend stock screener for retail dividend investors in 2010. I find that newly included managers increase dividend guidance. Additionally, retail investors' trading activity increases, and the market reacts more strongly to dividend guidance announcements. Taken together, these findings suggest that managers adopt a visibility-triggered disclosure strategy to engage desired retail investors, and that stock screeners play an important role in the functioning of capital markets.

In the second chapter, coauthored with Zachary Kaplan, Lauren Vollon, and Xiaoxi Wu, we introduce buyback guidance as a novel voluntary disclosure and examine why some repurchasing firms ("guiders") publicly disclose repurchase forecasts while others ("non-guiders") remain silent. Our empirical evidence shows that buyback guidance helps mitigate agency problems associated with excess cash by credibly signaling a commitment to sustained capital return. First, guidance enhances valuation for mature, cash-rich firms that benefit from steady payouts: guiders experience higher announcement returns, stronger long-horizon associations between returns and repurchases, and more negative reactions when they suspend guidance. Second, guiders repurchase more consistently and in greater amounts, with buybacks more closely tracking improvements in operating performance. Combined with the finding that guidance tends to serve as a lower bound rather than a precise target, this pattern suggests guiders commit to the disclosed amount while retaining upward flexibility, further mitigating agency costs by matching outflows of cash to inflows of cash. Third, this credible commitment comes at a cost: guiders pay 1–5% more for their repurchased shares than non-guiders, consistent with reduced flexibility to time the market. Taken together, our results suggest that the decision to issue buyback guidance evolves endogenously with firms' repurchase policies and underlying payout motives.

In the third and final chapter, coauthored with Tim Martens, we examine whether a firm's payout policy influences investors' beliefs about the value of its investments. We argue that the uncertainty underlying the investment process and the commitment implied by the payout policy jointly affect investors' valuation of a firm's investment. Leveraging the high uncertainty surrounding the timing and outcomes of the innovation process, we predict managers will increase their payout commitments as uncertainty resolves positively. Consistent with this hypothesis, we find that managers with more successful and valuable innovations raise sticky dividends while reducing more flexible share repurchases. The higher commitment of dividend payments implies a different information value for investors compared to share repurchases. By exploiting the plausibly exogenous timing of patent grants (i.e., the resolution of uncertainty), we provide asset-level evidence that investors assign a higher value to patents granted following dividend increases but find no evidence they do so following repurchase authorizations. Taken together, our findings suggest that innovative firms adjust their payout commitments based on the expected value of current investments in innovation, prompting investors to update their beliefs accordingly.

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CHAPTER 1: Visibility-Triggered Disclosure to Engage Retail Investors: Evidence from Dividend Stock Screener

1.1 INTRODUCTION

While retail investors play an increasingly active and important role in capital markets, it remains unclear whether managers are able and willing to engage with them. First, managers face substantial challenges in effectively disclosing information to this group, as retail investors can process disclosures only from firms they recognize (e.g., Merton, 1987; Fishman and Hagerty, 1989; Blankespoor et al., 2020).[1] Second, investor relations efforts are typically oriented toward attracting institutional investors, and recent evidence links retail trading to negative capital-market outcomes, suggesting that retail ownership may be undesirable from a managerial perspective (e.g., Bushee and Miller 2012; Barber et al., 2022; Michels, 2025).

However, managers can observe whether their firm is visible to retail investors. Retail investors typically filter securities using publicly available stock screeners - digital tools that generate subsets of stocks matching predefined criteria, which are shared on social media platforms (e.g., Fischer et al., 2024; Brock, 2025).[2] Additionally, retail investors are not a homogeneous group, and managers may seek to engage those with longer investment horizons (i.e., long-term retail investors), who are less likely to exert pressure to meet short-term earnings targets. In this paper, I examine whether managers increase the voluntary disclosure of information relevant to long-term retail investors following their firm's inclusion in the stock screener that such investors commonly use.

I exploit the launch and subsequent expansion of the first freely accessible, highly influential stock screener for retail dividend investors, disseminated through social media platforms (e.g., Seeking Alpha) and professional websites. This dividend stock screener (hereafter "List") provides accessible information about firms with a history of consecutive annual dividend increases (hereafter "dividend increase streak" or "DIS").[3] The List was

[1] I define retail investors as individuals who actively construct their portfolios by directly buying and selling stocks. Retail investors account for around 30% of daily market volume and directly own approximately 35% of the U.S. equity market (Barber et al., 2008; SIFMA, 2019; McCrank, 2021).

[2] For instance, Seeking Alpha offers stock screeners that allow investors to filter stocks according to their investment styles and criteria (e.g., growth, profitability, risk, dividends), enabling them to customize searches to align with specific strategies and objectives. (Seeking Alpha, 2025).

[3] This screening mechanism is particularly beneficial for investors seeking a reliable and growing income stream to supplement their retirement income. The popularity of this screening mechanism gave rise to the group known as the S&P 500 Dividend Aristocrats, well-known, established, dividend-paying firms with at least twenty-five consecutive years of dividend increases, which attracts substantial funds from institutional dividend investors (see Figure 1).

created in 2007 and remains the primary screening tool for retail dividend investors, with numerous popular dividend-focused blogs, forums, and newsletters recommending it as a starting point for stock screening (e.g., Law, 2020; Curry, 2023). The List is free, shared in Excel format, and updated monthly. While the List was originally created to provide free financial information on firms with at least twenty-five years of DIS (i.e., Dividend Aristocrats), the social media analyst who curated the List gradually lowered the required threshold for the length of DIS. At the end of 2010, he initiated the coverage of all dividend-paying firms with at least five years of DIS (hereafter "newly included firms").[4] This decision shed light on a group of dividend-paying firms previously unrecognized by retail dividend investors.[5] Specifically, the inclusion in the List enhances a firm's visibility among this investor group, increasing the likelihood that retail dividend investors will process a firm's disclosure.[6] I exploit this exogenous variation in the benefits of disclosing to retail dividend investors to examine its effect on managers' dividend disclosure choices.

I argue that managers can credibly commit to a dividend policy by voluntarily disclosing forward-looking dividend information. Issuing dividend guidance is a costly decision as investors interpret such disclosures as an implicit commitment to providing similar information in the future, and they react negatively to cessations in guidance or failures to meet guidance (e.g., Houston et al., 2010; Kaplan et al., 2024). This commitment is likely to be beneficial when managers have more positive information about the dividend policy, since any deviation from the expected trajectory could trigger negative market reactions due to dividend investors selling firms' shares.

Managers of newly included firms who expect to sustain their dividend trajectory have strong incentives to attract retail dividend investors. Companies tend to tailor their dividend policies to their target investor base (e.g., Miller and Modigliani, 1961; Graham and Kumar, 2006; Golubov et al., 2020). However, newly included firms have limited institutional dividend investors' attention, as they have not yet reached the status of "top" dividend payers (i.e.,

[4] This decision is likely to be driven by a combination of intrinsic and extrinsic incentives. On the intrinsic side, social media analysts invest considerable effort in establishing their reputations as opinion leaders within their investing community (Toubia and Stephen, 2013). On the extrinsic side, social media platforms introduced monetary reward programs to stimulate broader market coverage, coinciding with the period of the List's expansion (Koenraadt, 2024).

[5] Most newly included firms are industrial companies with which retail investors are unlikely to be familiar.

[6] At the time, there were no free alternative data sources covering firms with an active DIS. The five-year DIS threshold continues to serve as the minimum requirement for inclusion in a retail dividend investor's portfolio, as confirmed by members of Sure Dividend - one of the most influential dividend-investing websites - which was recently cited by Farmers & Merchants Bancorp in its dividend-increase press releases (e.g., Farmers & Merchants Bancorp, 2025).

Dividend Aristocrats). Therefore, attracting retail dividend investors can increase the dividend sensitivity of the shareholder base, helping managers to better align the firm's actual investor base with its target. The higher dividend sensitivity of the shareholder base reduces pressure on managers to meet earnings targets (e.g., Ham et al., 2023) and lowers the proportion of equity held by short-term retail investors with unpredictable, attention-driven trading behaviors.

The key identifying assumption is that the inclusion in the List affects managers' disclosure behavior only through the increase in firms' visibility among retail dividend investors. If this holds, I expect retail investors, but not institutional investors, to be affected by the inclusion event. To validate this assumption, I explore the dynamics of retail and institutional investors' trading around each of the 126 identified inclusion events between August and December 2010. I find that retail investor trading increases following a firm's inclusion in the List, while I find no significant effect for institutional investor trading. In particular, retail investors' trading activity rises by approximately 11% in the quarter following inclusion compared to the quarter preceding inclusion. These findings suggest that inclusion in the List affects retail investors' investment decisions, providing indirect evidence of the relevance of retail dividend investors within the overall group of retail investors.

I then test the main research question: whether inclusion in the dividend stock screener influences managers' dividend guidance behavior.[7] First, I employ a pre-post research design, which indicates that the likelihood of issuing a dividend guidance (the frequency of dividend guidance) increases by around 6% (50%) in the post-inclusion period. Next, for each unique firm-inclusion date in the treatment group, I identify a matched firm-inclusion date in the control group and conduct a difference-in-differences analysis. The results remain consistent and are primarily driven by cases in which managers disclose a target payout ratio, providing retail dividend investors with a simple benchmark for forecasting long-term dividends based on earnings projections. I also perform two placebo tests to mitigate concerns that differential time trends between treatment and control firms might be driving the results. First, I use a fictitious inclusion date one year before the actual one, which reveals no significant differences between the treatment and control groups in the post-placebo period (i.e., the pre-period of the main analysis). Second, I find no significant time-series difference between the treatment and control group in the voluntary disclosure of other important metrics (i.e., buybacks and EPS). Therefore, to explain my results, any alternative mechanism must account not only for why

[7] I construct dividend guidance variables using LSEG Guidance Reports (GR) data (see Mayew et al., 2024).

newly included firms increase dividend guidance while other similar dividend-paying firms do not, but also for why this divergence does not appear in the period immediately preceding the inclusion event, nor in other commonly disclosed metrics.

Finally, I examine the capital market implications of inclusion in the List. Building on recent research and anecdotal evidence suggesting that retail investor trading and visibility are important determinants of market outcomes (e.g., Barber and Odean, 2008; McCabe, 2021; Van der Beck and Jaunin, 2023), I predict and find that inclusion in the List affects the market reaction to dividend guidance announcements. While the unconditional average market reaction to dividend guidance announcements is positive and statistically different from zero (0.27%), the response is highly heterogeneous and depends on whether the guidance follows the inclusion event. Specifically, I find that dividend guidance issued after a firm's inclusion in the List elicits a significantly stronger market reaction (approximately 1%) relative to guidance issued prior to inclusion, after accounting for contemporaneous changes among non-included firms. This finding underscores the importance of stock screeners for price movements and market reaction to firms' disclosure.

This paper makes several contributions to the accounting and finance literature. While prior research on investor engagement suggests that managers dedicate significant time and attention to managing their institutional investor base (e.g., Hong and Huang, 2005; Bushee and Miller, 2012; Abramova et al., 2020), there is limited evidence of investor relations activities targeted at retail investors. However, managers may value a balanced investor base, as excessive institutional investor activism can constrain managerial discretion and hinder long-term growth (e.g., Burkart et al., 1997; Bushee, 1998; David et al., 2007; Beyer et al., 2014). I address this gap by proposing that managers monitor their firms' visibility on social media platforms and increase targeted disclosures when visibility among long-term retail investors increases. This visibility-triggered disclosure strategy aligns with how retail investors access, process, and respond to firm information (e.g., Barber and Odean 2008; Cookson et al. 2023), and highlights the importance of distinguishing retail investors by investment horizon to better understand managerial approaches toward this group. Additionally, the results suggest that visibility among long-term retail investors is an important determinant of disclosure content and clientele (e.g., Kalay 2015; Lui et al., 2025).

I also highlight the role of stock screeners as an important, yet understudied, phenomenon in the functioning of capital markets. On the investors' side, stock screeners provide retail investors with effective tools to tailor their portfolios according to their preferred investment strategies. By providing screening information, social media analysts (SMAs) distinguish

themselves from traditional sell-side equity analysts. While the latter typically focus on producing company-level reports and stock-specific recommendations (e.g., Schipper, 1991; Bradshaw, 2011), SMAs assume a "guiding" role in the overall portfolio construction process. On the managers' side, inclusion in stock screeners enhances the benefits of disclosure by increasing the likelihood that users of these screeners will process the firm's information. By showing that a firm's inclusion in stock screeners influences managers' disclosure choices, I provide evidence supporting recent findings that social media activity affects corporate decision-making (e.g., Gu et al., 2023; Heese and Pacelli, 2024; Koenraadt et al., 2024).

Finally, I contribute to the literature on dividend clientele. Existing research suggests that variation in investors' demand for dividends (due to demographic or tax differences) affects corporate payout policies (e.g., Baker and Wurgler, 2004a, 2004b; Desai and Jin, 2011; Golubov et al., 2020), and that dividends can be used as a tool to attract both institutional and retail investors (e.g., Allen et al., 2000; Becker et al., 2011; Graham and Kumar, 2006). I contribute to this literature in two ways. First, I provide evidence of the importance of a consistent streak of annual dividend increases for the portfolio of dividend investors. Second, I propose a novel mechanism managers use to credibly commit to the dividend policy, that is, issuing dividend guidance.

1.2 INSTITUTIONAL SETTING, RELATED LITERATURE AND MAIN HYPOTHESIS

1.2.1 Institutional Setting

In the early 2000s, screening on the length of the DIS was becoming increasingly popular among dividend investors. As a result, in 2005, S&P launched the S&P 500 Dividend Aristocrats Index, which tracks dividend-paying firms with at least twenty-five consecutive years of dividend increases.[8] Currently, sixty-nine firms in the S&P 500 (13.9%) have the Dividend Aristocrat status (e.g., Harrell, 2025). Figure 1.1 shows that obtaining the Dividend Aristocrats status allows firms to attract more funds from institutional dividend investors.

However, retail investors do not have free access to up-to-date information on market indexes. Therefore, retail dividend investors' demand for information on DIS length created an opportunity for SMAs to provide this data. In 2007, David Fish, an influential individual investor within the retail dividend investors online community, introduced the CCC List. The List classifies firms into three categories: Champions (at least twenty-five consecutive years of dividend increases, similar to the S&P Dividend Aristocrats), Contenders (at least ten

[8] Dividend Aristocrats is a registered trademark of S&P (application date: 05/21/2004).

consecutive years of dividend increases), and Challengers (at least five consecutive years of dividend increases). Updated monthly and circulated in Excel format, the List compiles and integrates dividends and financial information on these dividend-paying firms. Appendix 1.C reports the transcript of the rationale behind the social media analyst's decision to introduce and circulate the List, which is consistent with the notion that retail investors incur high costs in screening the full universe of firms in the capital market (e.g., Merton, 1987).

The first versions of the List only included Champions, mimicking the characteristics of the constituents of the S&P 500 Dividend Aristocrats.[9] Over the following three years, the List gradually expanded to include Dividend Contenders and Challengers. Appendix 1.D – Panel A shows the timeline of changes that led to the current categorization, while Appendix 1.D – Panel B includes comments from a Seeking Alpha article dated September 1st, 2010, in which the SMA announced the coverage of all dividend-paying firms with at least five years of DIS. This decision shed light on a group of dividend-paying firms that were previously overlooked by retail dividend investors but have the potential to become Dividend Aristocrats/Champions (e.g., Ciura, 2024). The five-year DIS threshold continues to serve as the minimum requirement for inclusion in a retail dividend investor's portfolio.[10]

1.2.2 Related Literature and Hypothesis Development

This section is organized as follows. First, I review the literature that examines the outcomes of increased firms' visibility among investors. Second, I introduce the role of stock screeners in retail investors' portfolio choices. Finally, I outline the main hypothesis.

1.2.2.1 The Outcomes of Increased Firms' Visibility Among Investors

An increase in institutional investor visibility, often resulting from index inclusion or investor relations efforts, has been associated with both beneficial and adverse implications. On the positive side, greater visibility among institutional investors can enhance stock liquidity, broaden the investor base, and improve pricing efficiency, as institutional investors often facilitate informed trading and monitoring (e.g., Bushee and Miller, 2012; Solomon and Soltes, 2015). Additionally, increased scrutiny may reduce managerial opportunism (e.g., Hope et al., 2016). However, elevated institutional visibility, particularly from short-horizon or transient investors, can also induce managerial myopia (e.g., Bushee, 1998; Cremers et al., 2020). Thus,

[9] The Champion's list is not the same as the Dividend Aristocrats one, as it includes all firms with at least twenty-five years of DIS and does not condition on being part of the S&P 500 index.

[10] In a private interview, members of Sure Dividend confirmed they only include firms with at least five years of DIS in their investment recommendations. Sure Dividend is one of the most influential dividend-investing websites, which was recently cited by Farmers & Merchants Bancorp in its dividend-increase press releases (e.g., Farmers & Merchants Bancorp, 2025).

while institutional investor visibility can foster transparency and discipline, it may also pressure managers to prioritize short-term performance over sustainable value creation, mainly depending on the ownership horizon.

In contrast to the well-developed literature on institutional investor visibility, research on retail investor visibility remains limited, primarily due to the following two empirical challenges. First, while index inclusions (e.g., Russell 2000/3000) offer a quasi-natural experiment for studying the effect of changes in institutional investors' visibility, there is no analogous setting for retail investors. Second, existing literature often treats retail investors as a homogeneous group and cannot differentiate them by ownership horizon, a factor shown to be critical in explaining the effects of increased institutional investors' visibility.[11]

1.2.2.2 The Role of Stock Screeners in Retail Investors' Portfolio Choices

Empirical research shows that retail investors tend to rely on attention-grabbing events when making trading decisions (e.g., media coverage, stock price spikes, and social media trends), and they are more likely to invest in firms that have already caught their attention (e.g., Barber and Odean, 2008; Cookson et al., 2023). As a result, when retail investors consider buying a firm for the first time, it is often driven by factors outside the firm's control.

Retail investors rarely attempt to analyze the full universe of publicly traded companies (e.g., Merton, 1987). Instead, they typically use online tools, known as stock screeners, to filter stocks based on user-defined criteria (e.g., Brock, 2025). These screeners help simplify decision-making by narrowing the investment universe to a manageable subset that aligns with an investor's goals. For instance, Seeking Alpha offers stock screeners that allow investors to filter stocks according to their investment styles and criteria (e.g., growth, profitability, risk, dividends), enabling them to customize searches to align with specific strategies and objectives. (Seeking Alpha, 2025). As many professional websites and blogs note, stock screeners are now considered "essential tools" for retail investors (e.g., Rodeck, 2024; Isaacs, 2025).

Overall, the initial purchase decisions of retail investors are frequently influenced by a firm's inclusion in widely used stock screeners among their investing community.

1.2.2.3 Hypotheses Development

Inclusion in popular stock screeners significantly enhances the effectiveness of voluntarily disclosing information targeted at retail investors who rely on such tools. Once retail investors recognize a stock, they typically make investment decisions relying on publicly available

[11] Consistently, recently developed retail attention measures cannot distinguish among different types of retail investors (e.g., Da et al., 2011; Liu et al., 2023).

corporate disclosures (e.g., Lawrence, 2013; Ben-Rephael et al., 2022; Dambra et al., 2023). Therefore, appearing in the results of stock screeners enhances the likelihood that retail investors will process managers' disclosure, thereby increasing the benefits of voluntarily providing information relevant to them. Whether managers are willing to engage with retail investors through voluntary disclosure likely depends on retail investors' investment horizon. Survey evidence suggests that managers strongly prefer long-term investors, as a shareholder base dominated by short-term investors can constrain managerial focus on strategic initiatives and has been linked to reduced long-term growth (Beyer et al. 2014). Therefore, to the extent that retail investors have a long-term investment horizon, managers have strong incentives to attract and engage with them.

Motivated by recent literature suggesting that managers' guidance choices are influenced by their long-term information and strategic intentions (e.g., Einhorn and Ziv, 2008; Heinle et al., 2025; Kaplan et al., 2024), I argue that managers can credibly signal their commitment to retail investors' needs by voluntarily disclosing the information these investors demand. Issuing guidance is a costly decision, as investors often interpret it as an implicit commitment to continue providing similar disclosures in the future (e.g., Einhorn and Ziv, 2008). Investors tend to react negatively to either the cessation of guidance or failure to meet previously issued guidance (e.g., Houston et al., 2010; Kaplan et al., 2024). Additionally, attracting an investor base that is misaligned with a manager's long-term objectives can be detrimental, as it may create price pressure in the future (i.e., when investors realize the firm does not align with their investment goals). Therefore, managers' voluntary disclosure choices can aid retail investors' portfolio choices by signaling which firms are committed to meeting their needs in the long term.

Overall, while existing research suggests that managers adopt an active investor relations strategy when targeting institutional investors (e.g., Bushee and Miller, 2012; Dambra et al., 2024), I hypothesize that managers pursue a passive strategy when aiming to attract retail investors. Specifically, I predict that managers leverage inclusion in popular stock screeners to engage targeted retail investors through voluntary disclosure. This hypothesized difference in managers' behavior reflects fundamental distinctions in how institutional and retail investors access, process, and respond to firm information (e.g., Barber and Odeon 2008; Blankespoor et al., 2019; Liu et al., 2023).

1.3 SAMPLE CONSTRUCTION PROCESS AND RESEARCH DESIGN

1.3.1 Sample Construction Process and Matching Approach

Table 1.1 - Panel A presents the sample construction process for the treatment group. The initial sample includes S&P 1500 firms included in the List during its major expansion between August and December 2010. This choice is motivated by two considerations. First, the LSEG Guidance Reports (GR) – the source of dividend guidance announcements - only covers firms included in the S&P 1500 (see Mayew et al., 2024). Second, earlier List expansions, documented in Appendix 1.D - Panel A, affected only a small subset of firms, thereby limiting the statistical power of the analysis.[12] The initial sample consists of 157 firms, indicating that, at the end of 2010, approximately 11% of S&P 1500 firms had a DIS between five and fourteen years. I then require firms to be matched to Compustat/CRSP for financial data and to TAQ for information on retail and institutional trading activity. The final sample consists of 126 included firms, each with a unique inclusion date. Table 1.1 - Panels B and C report the distribution of the treatment group by inclusion date and industry, respectively. Approximately 87% of the included firms were added at the beginning of August and September 2010, when the SMA undertook its most significant List expansion effort. In terms of industry distribution, newly included firms are fairly spread across sectors, with no notable concentration in any particular one.

Table 1.1 - Panel D presents the sample construction process for the control group. To establish a clean control group, I begin with S&P 1500 dividend-paying firms that maintain an active dividend increase streak (defined as at least two consecutive years of dividend increases) and that were not included in the List between August 2009 and December 2011. This restriction ensures that none of the control firms were treated during the sample period, which requires data spanning one year before and after each firm's inclusion date. I then apply the same data availability criteria used for the treatment group. The resulting sample of potential control firms consists of 158 firms.

Finally, I merge the full sample of treatment and control groups into LSEG Guidance Reports. GR provides a detailed history of corporate guidance as originally reported by firms and exhibits high data accuracy (Mayew et al., 2024). The initial sample includes 605 disclosures for the GR item "Common Stock Dividends Paid" from August 2009 to December 2011 (i.e., one year before the first inclusion date and one year after the last inclusion date) as

[12] Standard inclusion events that are unrelated to a List expansion are excluded, as managers can anticipate such events, resulting in uncertainty regarding the timing of the expected increase in dividend disclosure.

shown in Table 1.1 – Panel E. To identify dividend guidance that targets retail investors, I exclude instances in which the guidance does not report the word "dividend", and instances issued in settings for highly qualified investors. This process yields a final sample of 387 dividend guidance events.

1.3.2 Matching Approach and Research Design

I encountered two empirical challenges in identifying the most appropriate control group for my sample of treated firms. First, both the treatment and control groups are inherently limited in size due to the specific characteristics of the setting (i.e., S&P 1500 dividend-paying firms with a history of DIS covered by main databases). Second, while each treated firm has a known inclusion date, I need to develop a method to assign an inclusion event to each firm in the control group. To address these challenges, I opted for a nearest neighbor matching approach (e.g., Dehejia and Wahba, 2002; Smith and Todd, 2005). Through this method, I select the most suitable peer within the same industry as the treated firm. This approach ensures a match is found for every firm-inclusion date in the treatment group, assigning each matched control firm the same inclusion date as its corresponding treated firm.

While I contend that this matching method is the most appropriate for my setting and provides a satisfactory balance in covariates (see Section 4.1 for additional details), I acknowledge that differences between the treatment and control groups may still introduce variance into the estimated treatment effects. To mitigate this concern, I also employ an entropy balancing matching approach, using all 158 firms in the control group and assigning them the most frequent inclusion date.[13] Additionally, as the control group mainly contains firms that were already included in the List, I also perform a robustness test with firms that were never included in the List during the sample period, but will be included in the following three years.[14]

I define each quarter based on the actual inclusion date for the treatment group or the assigned inclusion date for the control group. Specifically, I use a rolling window approach to construct a panel dataset for quarterly event windows, covering a total of eight quarters (i.e., four before and four after the inclusion date). Each quarter is defined by the number of days relative to the inclusion date, as illustrated in Figure 1.2.

[13] As 87% of the included firms were added at the beginning of August and September 2010, this choice is considered the most suitable one for the entropy balancing approach.
[14] See Online Appendix – Table OA1.

1.4. COVARIATES BALANCE AND DESCRIPTIVE STATISTICS

1.4.1 Covariates Balance

I begin by showing the covariate balance between the treatment and control groups used in the nearest neighbor matching approach in Table 1.2 - Panel A. I match firms based on firm characteristics that influence dividend payout policy and the likelihood of issuing dividend guidance, such as size, investment opportunities, capital structure and profitability (e.g., Fama and French 2001; DeAngelo et al. 2006). Specifically, I minimize the Euclidean distance between the following standardized variables: firm size (ln(Market Value)); market-to-book ratio (ln(Market-to-Book)); total cash holdings (Cash); operating profitability (ROA); leverage (Leverage); capital expenditures (CAPEX); and dividend yield (Dividend Yield).[15] After matching, the only pre-inclusion characteristic that differs between the treatment and control group is capital expenditures, as firms in the control group tend to invest less as a percentage of assets.[16]

1.4.2 Descriptive Statistics

Table 1.2 - Panel B presents descriptive statistics. The first section reports dividend guidance variables measured at the firm-quarter level, as illustrated in Figure 1.2. For each quarter, I measure both the presence and intensity of dividend guidance. 13.24% of firm quarters include at least one dividend guidance, while the average number of such guidance per quarter is 0.19. I also provide descriptive statistics on the content of these disclosures, focusing on the five most frequently discussed dividend topics identified by Kaplan et al. (2025). The two most common themes in my sample are strategic capital allocation (6.4%) and dividend growth (5.6%). Appendix B provides examples of dividend guidance statements and the related classification in the five categories.

The second section of Table 1.2 – Panel B presents firm-day level variables measured over the two quarters surrounding the inclusion event. To examine retail investor trading behavior around this event, I rely on TAQ data, and the methodology developed by Boehmer et al. (2021). This approach is based on the observation that marketable retail orders typically receive minimal price improvement over the National Best Bid or Offer (NBBO) and are often filled

[15] Each variable is measured at the last available fiscal year end before the 1st of August 2010.
[16] The mean number of DIS differs by design, with the treatment group having a DIS length of seven years, compared to eighteen years for the control group. I test the robustness of the main results by using, as an alternative control group, a sample of dividend-paying firms with a shorter DIS. The results remain consistent and are reported in Online Appendix – Table OA1.

internally or routed to wholesalers. On average, firms experience 507 retail trades per day, with an average daily retail trading volume of 0.176 million shares.

Descriptive statistics also suggest that the market responds to dividend guidance, with an average abnormal return of 0.27%, which is statistically different from zero. Finally, the frequency of buyback guidance is comparable to that of dividend guidance, whereas EPS guidance appears more frequently.

1.5. INVESTORS' TRADING BEHAVIOR AROUND INCLUSION EVENTS

The key identifying assumption is that inclusion in the List influences managers' disclosure behavior solely through its impact on firms' visibility among retail investors. If this holds, I would expect retail investors, but not institutional investors, to be affected by the inclusion event. To validate this assumption, I analyze the trading dynamics of retail and institutional investors around the 126 inclusion events identified in Table 1.1 – Panel A. I begin by examining the trends in retail trades using the following model:

$$Ret\ Trades_{i,d} = \alpha + \beta_1\, Post\ Inclusion_{i,d} + \Sigma FE + \varepsilon \quad (1.1A)$$

The subscript *i* denotes the firm, while *d* indicates the trading day. The dependent variable, either *Ret Num Trades* or *Ret Vol Trades,* is measured as in Li et al. (2024). *Ret Num Trades* refers to the daily number of retail trades, derived from TAQ data using the identification strategy of Boehmer et al. (2021), and is expressed in thousands of trades. *Ret Vol Trades* captures the daily retail investor trading volume, also based on TAQ data and the Boehmer et al. (2021) approach, and is measured in millions of shares. The independent variable of interest, *Post Inclusion*, is a dummy variable equal to one in the quarter following the inclusion date, and zero in the quarter before the inclusion date. The specification includes Inclusion Event fixed effects to isolate within-events variation, and standard errors are clustered at the firm level to account for within-firm correlation in the error terms. Continuous variables are winsorized at the 1st and 99th percentiles.

Table 1.3 – Panel A reports results from estimating Equation (1.1A). This table presents regression results on the impact of inclusion in the stock screener over a [-63, +63] trading day window (i.e., one quarter before and after the inclusion), showing economically and statistically significant increases in retail trading activity. For the number of trades (columns 1 and 2), OLS regression estimates a 0.051 increase (column 1), corresponding to 51 additional daily trades. In the Poisson model (column 2), the coefficient of 0.101 implies approximately a 10.6% increase in the number of trades post-inclusion. For trade volume (columns 3 and 4), OLS estimates an increase of 0.013 (13,000 shares), while the Poisson coefficient of 0.073

(column 4) implies a 7.6% increase in daily trading volume. These findings indicate that inclusion in the List is associated with economically meaningful gains in both the frequency and scale of retail trading.

I employ the same model to examine trends in institutional trading activities:

$$Inst\ Trades_{i,d} = \alpha + \beta_1\, Post\ Inclusion_{i,d} + \Sigma FE + \varepsilon \quad (1.1B)$$

Institutional trades are defined using a value-based cutoff of $50,000, consistent with prior literature (e.g., Bhattacharya et al., 2007). I construct two key measures of institutional trading activity. *Inst Num Trades* is the daily number of institutional trades measured in thousands of trades. *Inst Vol Trades* is the daily institutional investor trading volume and measured in millions of shares. Table 1.3 - Panel B presents the results from estimating Equation (1.1B). The findings indicate that inclusion in the List is not associated with any detectable change in institutional trading behavior. This absence of an effect provides support for the plausibility of the identification strategy, as it suggests that the documented outcomes are unlikely to be driven by shifts in institutional investor activity around the inclusion event.[17]

1.6. THE EFFECT OF LIST INCLUSION ON MANAGERS' DIVIDEND GUIDANCE

In this section, I investigate the main hypothesis: that managers increase their issuance of dividend guidance following inclusion in the List. The analysis proceeds in three steps. First, I assess managerial behavior at both the extensive and intensive margins, evaluating whether inclusion increases not only the likelihood that a firm issues dividend guidance but also the frequency with which such guidance is provided. Second, I implement two placebo tests to validate the identification strategy. The first placebo test examines pre-inclusion dynamics to confirm that the pre-parallel trends assumption holds, while the second test evaluates whether inclusion has any contemporaneous impact on the disclosure of other commonly reported financial metrics, thereby ruling out confounding disclosure-related effects. Finally, I explore the content dimension of disclosure by analyzing the specific types of dividend-related information that managers are more likely to release following inclusion in the List.

[17] In the Online Appendix, I test whether institutional ownership changes over the sample period and find a negative but statistically insignificant effect. Similarly, I find no significant effect on changes in the dividend sensitivity of the institutional investor base.

1.6.1 The effect of List Inclusion on the presence of Dividend Guidance

First, I investigate whether inclusion in the List affects the likelihood that a firm issues at least one dividend guidance announcement. To do so, I employ a pre-post research design using 126 firm-inclusion events and estimate the relationship through the following OLS model:

$$Div\ Guidance_{i,q} = \alpha + \beta_1\, Post\ Inclusion_{i,q} + \Sigma Controls_{i,q} + \Sigma FE + \varepsilon_{i,q} \quad (1.2A)$$

The outcome variable is *Div Guidance*, an indicator equal to one if the firm issues a forward-looking dividend-related statement in the quarter identified in Figure 1.2, zero otherwise. The independent variable of interest, *Post Inclusion*, is a dummy variable equal to one in the four quarters following the inclusion date, and zero in the four quarters before the inclusion date. I control for time-varying firm characteristics at the quarter level. Specifically, I include firm size (*ln(Market Value)*); market-to-book ratio (*ln(Market-to-Book*)); total cash holdings (*Cash*); operating profitability (*ROA*); leverage (*Leverage*); capital expenditures (*CAPEX*); and dividend (*Dividend Yield*). The specification includes, alternatively, Industry and Inclusion Event fixed effects. Standard errors are clustered at the firm level and continuous variables are winsorized at the 1st and 99th percentiles.

Table 1.4 - Panel A, Columns 1–3 report the results from estimating Equation (1.2A). Column 1 presents the baseline specification without controls or fixed effects. This choice follows prior work (e.g., Whited et al., 2022), reflecting the concern that the inclusion of controls may introduce bias and reduce transparency. The results indicate that firms are 6.3% more likely to issue dividend guidance in the post-inclusion period relative to the pre-inclusion period. In Column 2, I incorporate industry fixed effects and time-varying firm-level controls to account for systematic differences across industries and temporal dynamics. The estimated effects remain qualitatively unchanged, and the results further suggest that larger firms, those with higher dividend yields, and those with lower investment intensity are more likely to issue dividend guidance. Finally, Column 3 replaces industry fixed effects with inclusion-event fixed effects to exploit within-event variation. Once again, the results are qualitatively consistent with the baseline findings, reinforcing the robustness of the effect across alternative model specifications.[18]

Next, to account for unobservable time-varying factors within included firms that could influence managerial decisions regarding dividend guidance, I estimate a difference-in-differences model. This specification leverages the matched sample constructed through

[18] In untabulated analysis, the results remain robust when using a logit model without fixed effects. Since logit models are not well-suited for the inclusion of fixed effects, I rely on OLS regressions for the tabulated analysis.

nearest-neighbor matching, as described in Section 3.2.1, to ensure greater comparability between treated and control firms:

$$Div\ Guidance_{i,q} = \alpha + \beta_1 Post\ Inclusion_{i,q} + \beta_2 Included\ Firm_{i,q} + \beta_3 Post\ Inclusion_{i,q} * Included\ Firm_{i,q} + \Sigma Controls_{i,q} + FE + \varepsilon_{i,q} \quad (1.2B)$$

Table 1.4 – Panel A, Columns 4-6 shows the results from estimating Equation (1.2B). Compared to the previous specification, Column 4 introduces the *Included Firm* indicator and its interaction with the *Post Inclusion* variable, enabling a difference-in-differences analysis. *Included Firm* is defined as a dummy variable equal to one if the firm has been added to the List between August 2010 and December 2010, zero otherwise. The lack of significance of *Post Inclusion* suggests there is no general time trend affecting the control group. The coefficient on *Included Firm* (0.040) is positive but not statistically significant. Importantly, the *Post Inclusion* × *Included Firm* interaction term is positive (0.065), implying that after inclusion, the treated firms show a further significant increase in the likelihood of issuing dividend forecasts compared to the control group. In Column 5, I add industry fixed effects and controls. The *Included Firm* becomes statistically significant, indicating that firms included in the List are more likely to issue dividend guidance. This finding supports the idea that newly added firms have stronger incentives to disclose forward-looking dividend information, given their shorter, and thus less established, track record of consecutive dividend increases relative to firms in the control group.[19] Results remain robust when adding the inclusion event fixed effect in Column 6.

1.6.2 The effect of List Inclusion on the presence of Dividend Guidance

While inclusion in the List increases firms' visibility among retail dividend investors, it is still possible that these investors do not fully process firms' disclosures. If managers aim to communicate with these investors and ensure they receive the information, they should not only be more likely to issue guidance in the quarter, but also to increase the frequency of such forecasts, repeating the same information in different contexts within the same quarter, and/or providing more detailed guidance. I test this hypothesis by modifying the OLS regression outlined in Equation (1.1A) and Equation (1.1B), with a Poisson regression having the count of dividend guidance in the quarter as a dependent variable (*Div Guidance Count*).

[19] This evidence is consistent with the perspective of the investor relations executive at Chevron, who suggests they are less likely to issue dividend guidance than buyback guidance because the firm's track record of dividend increases "speaks for itself" regarding management's intentions (see Kaplan et al., 2025, footnote 2).

Table 4 - Panel B reports the result. *Post Inclusion* is positive and statistically significant across all columns for pre-post research design (Columns 1-3), and the interaction terms (*Post Inclusion* * *Included Firms*) is positive and statistically significant across all columns for the differences-in-differences research design (Columns 4-6). Specifically, managers of included firms issue approximately 50% more dividend guidance in the post period compared to firms in the control group.

1.6.3 Pre-Parallel Trends

If the differential time trend is indeed driven by an increase in included firms' visibility among retail dividend investors, there should be no significant difference in trends between the two groups during the period immediately preceding the inclusion in the List. To test this hypothesis, I re-estimate Equations (1.2A and 1.2B), assigning each event to a placebo date set one year before the actual or assigned inclusion date. Table 5 - Panel A presents the results. The coefficients that previously loaded significantly in each column are now consistently insignificant. These results support the parallel trends assumption underlying the main analysis and corroborate the graphical evidence presented in Figure 1.3. Thus, any alternative explanation for the results must account not only for why newly included firms increase their issuance of dividend guidance while similar dividend-paying firms do not, but also for why no divergent trend is observed in the period immediately preceding the inclusion in the List.

1.6.4 Falsification Test: The effect of List inclusion on Buyback and EPS guidance

Additionally, I conduct a falsification test using buyback and EPS guidance. Life-cycle theories of payouts suggest that firms maximize value by returning excess cash to shareholders (e.g., DeAngelo and DeAngelo, 2006; Faulkender and Wang, 2006). Thus, the observed increase in dividend guidance among newly included firms may reflect broader investor demand for managerial commitment to cash distribution, rather than increased visibility among retail investors. To test this, I estimate the OLS and Poisson models outlined in Equation (1.2B), replacing the dependent variable with *Byb Guidance*, an indicator variable equal to one if the firm issues at least one buyback guidance in the quarter, and zero otherwise, and *Byb Guidance Count*, equal to the number of buyback guidance issued in the quarter. Table 1.5, Panel B (Columns 1 and 2) reports the results. I find no significant effect of inclusion in the List on buyback guidance behavior.

Additionally, the effect on dividend guidance may also be driven by an overall increasing propensity of included firms to guide. I test this hypothesis by estimating the effect of inclusion

on the List on EPS guidance behavior. Similarly to the falsification test on buyback guidance, I replace the dependent variable in Equation (1.2B) with *EPS Guidance*, an indicator variable equal to one if the firm issues at least one EPS guidance in the quarter, and zero otherwise, and *EPS Guidance Count*, equal to the number of EPS guidance issued in the quarter. Table 1.5, Panel B (Columns 3 and 4) reports the results. I find no significant effect of inclusion in the List on EPS guidance behavior. Overall, these insignificant results do not indicate the presence of differential disclosure-related time trends between the treatment and control groups that could bias the estimated effects.

1.6.5 The effect of List inclusion on Guidance Content

Retail investors face high disclosure processing costs due to limited financial expertise, time constraints, and reliance on heuristics (e.g., Barber and Odean, 2013; Blankespoor et al., 2019). Therefore, managers who seek to engage with them should convey simple, salient, and easy-to-remember information. In the context of retail dividend investors, these individuals tend to look for a clear commitment to dividend policy and information that helps them forecast long-term dividend levels.[20] Following Kaplan et al. (2025), I classify dividend guidance content into five categories based on the most frequently discussed dividend topics: consecutive dividend increases, dividend growth, target payout ratio, shareholder returns, and strategic capital allocation. Each guidance may contain multiple content elements (see Appendix A for examples). I test which types of information managers convey after inclusion using the following model:

$$Div\ Guidance\ Content_{i,q} = \alpha + \beta_3 Post\ Inclusion_{i,q} * Included\ Firm_{i,q} + \Sigma Controls_{i,q} + FE + \varepsilon_{i,q} \quad (1.3)$$

Div Guidance Content is an indicator variable for the five dividend content categories outlined above. I include both Inclusion Event and Quarter Trend fixed effects, and I cluster standard errors by firm. Table 6 shows the results from estimating Equation (1.3). Columns 1-2 provides weak support for an increase in the likelihood of issuing dividend guidance related to consecutive dividend increases (Column 1) and Div Growth (Column 2). The main effect is shown in Column 3, with a highly significant increase in the issuance of target payout ratio information. I find no support for an increase in the issuance of guidance related to shareholder returns (Column 4), or guidance related to capital allocation priorities (Column 5). Overall, the findings suggest that newly included firms respond to the inclusion in the List by increasing

[20] Specifically, interviews with dividend-focused social media analysts suggest that they seek information that can help them forecast dividends over the next five years.

the issuance of target payout ratios, which helps investors forecast long-term dividend levels based on earnings projections.

1.7. THE EFFECT OF LIST INCLUSION ON THE MARKET REACTION TO DIVIDEND GUIDANCE

Finally, I test whether inclusion in the stock screener has a sizeable effect on the market's reaction to dividend guidance. Specifically, I expect the market to respond more strongly to dividend guidance announcements after inclusion in the List, as retail dividend investors become more likely to process and act upon dividend-related information. I examine this question by employing the following model at the firm-guidance level:

$$CAR_{i,g} = \alpha + \beta_1 Post\ Inclusion_{i,g} + \beta_2 Included\ Firm_{i,g} + \beta_3 Post\ Inclusion_{i,g} * Included\ Firm_{i,g} + \Sigma Controls_{i,g} + FE + \varepsilon_{i,g} \quad (1.4)$$

where the dependent variable, *CAR*, is the cumulative abnormal return over the five-day window centered on the dividend guidance announcement date. As 47% (17%) of dividend guidance announcement are bundled with earnings announcement (dividend announcement), I always control for the concurrent earnings surprises (*Positive EA Surprise* and *Negative EA Surprise*), and concurrent dividend changes *(% ΔDiv*). I set earnings surprise variables (dividend change variables) to zero when the dividend guidance announcement is not bundled with earnings announcement (dividend announcement).[21] Additionally, I control for time-varying firm characteristics at the quarterly level, and I cluster standard errors by firm.

Table 1.7 presents the results from estimating Equation (1.4). In Column 1, I test for a differential time-trend in market reaction to dividend guidance for included (treatment) and non-included (control) firms, with no controls and no fixed effects. The coefficient on the interaction term is positive but not statistically different from zero. I then add controls (Column 2), time-trend fixed effect (Column 3), and inclusion event fixed effect (Column 4). The effect becomes statistically significant with a magnitude that increases when examining variation within-inclusion events. Overall, these findings suggest that inclusion in the List has important implications on how the market responds to dividend disclosure.

[21] The bundling of dividend guidance with earnings announcements is consistent with the prior literature that management generally combines their guidance practices with earnings announcements (Call et al. 2024). Without controlling for the concurrent earnings surprise and concurrent dividend changes, the average returns to dividend guidance events are a statistically significant 0.27% (Table 2 – Panel A).

1.8. CONCLUSION

I exploit a unique setting related to retail dividend investors and dividend-paying firms to examine how inclusion in popular stock screeners affects managers' disclosure decisions and market reactions to such disclosure. I show that managers respond strategically to the enhanced visibility among targeted retail investors by increasing the voluntary disclosure of information relevant to this investor base. Additionally, the inclusion in the List has important implications for price movements, corroborating prior evidence on the ability of retail investors to move the market (e.g., Barber and Odean, 2008; Van der Beck and Jaunin, 2023), and the relevance of disclosure processing costs for these investors (e.g., Blankespoor et al., 2020).

These findings yield important insights into managers' approach to retail investors. While prior research suggest that managers may be willing to deter the entrance of the average retail trader, which are short-term stock traders with unpredictable and attention-driven trading behavior divorced from firms' fundamentals outcomes (e.g., Hvidkjaer, 2008; McCabe, 2021; Barber et al., 2022; Michels, 2024), I show that managers are willing to attract dedicated, long-term retail investors. The result emphasizes the importance of recognizing heterogeneity among retail investors and indicates that additional research is warranted on the managerial strategies aimed at engaging the desired investor segment.

Beyond the academic implications, these findings also carry relevance for regulatory efforts aimed at protecting and educating retail investors, a globally important issue with implications across diverse market contexts. In the U.S., the rise of game-like trading applications has heightened concerns about the approach of retail investors to capital markets, potentially harming both investors themselves and the firms in which they invest (e.g., Bloomberg News, 2021). Encouraging long-term investment behavior offers regulators a means of mitigating the adverse effects associated with game-like trading. In the EU, retail investors tend to participate less actively in capital markets (e.g., European Commission, 2023). Promoting prudent forms of retail investment may help households better prepare for retirement, particularly in countries facing severe demographic challenges and substantial public pension burdens relative to GDP.

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1.9 APPENDIXES

Appendix 1.A: Variables Definition

Variable Name	*Variable Definition*	*Data Sources*
Dividend Guidance Variables		
Div Guidance	An indicator equal to one if the firm issues a forward-looking dividend-related statement in the quarter, zero otherwise. I exclude sentences that do not contain the word "dividend" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)
Div Guidance Count	A count variable equal to the number of forward-looking dividend related statement in the quarter. I exclude sentences that do not contain the word "dividend" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)
Cons Div Increases Guid	An indicator equal to one if the firm issue a dividend guidance related to the *annual streak of dividend increases* in the quarter, zero otherwise.	LSEG Guidance Reports (GR)
Div Growth Guid	An indicator equal to one if the firm issues a dividend guidance related to the *expected growth in dividends* in the quarter, zero otherwise.	LSEG Guidance Reports (GR)
Target Payout Ratio Guid	An indicator equal to one if the firm issues a dividend guidance related to the *target payout ratio* in the quarter, zero otherwise.	LSEG Guidance Reports (GR)
Shareholder Return Guid	An indicator equal to one if the firm issues a dividend guidance related to *shareholder returns* in the quarter, zero otherwise.	LSEG Guidance Reports (GR)
Strategic Capital Allocation Guid	An indicator equal to one if the firm issues a dividend guidance related to *strategic capital allocation* in the quarter, zero otherwise.	LSEG Guidance Reports (GR)
Dependent Variables and Independent Variables of Interest		
Included Firm	A dummy variable equal to one if the firm has been added to the CCC List between August 2010 and December 2010, zero otherwise.	CCC List
Post Inclusion	A dummy variable equal to one in the days/quarters following the inclusion date, zero in the days/quarters before the inclusion date.	CCC List
Ret Num Trades	Daily number of retail trades, based on TAQ data using the approach in Boehmer et al. (2021) and measured in thousands of trades.	TAQ
Ret Vol Trades	Daily retail investor trading volume, based on TAQ data using the approach in Boehmer et al. (2021) and measured in millions of shares.	TAQ
Inst Num Trades	Daily number of institutional trades using the 50,000-dollar value-based cutoff (e.g., Bhattacharya et al., 2007).	TAQ
Inst Vol Trades	Daily institutional investor trading volume using the 50,000-dollar value-based cutoff (e.g., Bhattacharya et al., 2007).	TAQ
Buyback Guidance	An indicator equal to one if the firm issues a forward-looking buyback-related statement in the quarter, zero otherwise. I exclude sentences that do not contain the words "buyback" or "repurchase" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)
Buyback Guidance Count	A count variable equal to the number of forward-looking buyback related statement in the quarter. I exclude sentences that do not contain the words "buyback" or "repurchase" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)
EPS Guidance	An indicator equal to one if the firm issues a forward-looking EPS-related statement in the quarter, zero otherwise. I exclude sentences that do not contain the words "EPS" or "earnings per share" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)

Appendix 1.A (Continued)

Variable Name	*Variable Definition*	*Data Sources*
Dependent Variables and Independent Variables of Interest (continued)		
EPS Guidance Count	A count variable equal to the number of forward-looking EPS related statement in the quarter. I exclude sentences that do not contain the word words "EPS" or "earnings per share" and that are issued in settings for highly qualified investors.	LSEG Guidance Reports (GR)
CAR	The cumulative abnormal return calculated over a five-day event window [-2, +2] around the date of a dividend guidance instance. The event date (day 0) is the announcement date provided by the LSEG Guidance Reports (GR). We calculate CAR using the market-adjusted returns model, which subtracts the market return from the firm's stock return over the event window.	WRDS Event Study
Firm Characteristics		
ln(Market Value)	The natural logarithm of market value of equity. It is measured both at the yearly and quarterly level.	Compustat
ln(Market-to-Book)	The natural logarithm of one plus the Market-to-book ratio. It is measured both at the yearly and quarterly level.	Compustat
Cash	Total cash scaled by total asset. It is measured both at the yearly and quarterly level.	Compustat
ROA	The operating income scaled by total assets. It is measured both at the yearly and quarterly level.	Compustat
Leverage	The ratio between total asset and equity. It is measured both at the yearly and quarterly level.	Compustat
CAPEX	Capex expenditures scaled by total assets. It is measured both at the yearly and quarterly level.	Compustat
Dividend Yield	The ratio between dividends and stock price. It is measured both at the yearly and quarterly level.	Compustat
Earnings Surprise and Dividend Change		
Positive EA Surprise	The positive component of the earnings surprise associated with an earnings announcement. Earnings surprise is calculated as the firm's reported earnings per share (EPS) minus the consensus analyst forecast of EPS. This variable equals the earnings surprise if it is positive and zero if the earnings surprise is negative or the dividend guidance announcement is not bundled with an earnings surprise.	I/B/E/S
Negative EA Surprise	The negative component of the earnings surprise associated with an earnings announcement. Earnings surprise is calculated as the firm's reported earnings per share (EPS) minus the consensus analyst forecast of EPS. This variable equals the absolute value of the earnings surprise if the earnings surprise is surprise or the dividend guidance announcement is not bundled with an earnings announcement.	I/B/E/S
% ΔDiv	The percentage change in dividends implicit in the dividend declaration. This variable is set to zero if the dividend guidance announcement is not bundled with a dividend change declaration.	CRSP

Appendix 1.B: Classification of Dividend-Related Forward-Looking Statements

GR Information			*Content of The Guidance*				
COMPANY NAME	**GUIDANCE ISSUANCE DATE**	**GUIDANCE TEXT**	**GUIDANCE CLASSIFICATION**				
			Cons Div Increases Guid	*Div Growth Guid*	*Target Payout Ratio Guid*	*Shareholder Return Guid*	*Strategic Capital Allocation Guid*
CONOCOPHILLIPS	25may2010	"Were going to spend around 12 billion a year in capital over the next two years and 3 billion a year in dividends"	No	No	No	No	Yes
CVS CAREMARK CORP	01jun2011	"We set a targeted dividend payout ratio of approximately 25 to 30 by 2015 compared to 13 in 2010"	No	No	Yes	No	No
DEERE & COMPANY	24nov2010	"Over time we want to consistently deliver a series of moderately increased dividends while targeting a 25 to 35 pay out ratio on average"	Yes	No	Yes	No	No
HARRIS CORP	23mar2011	"And in order of preference and priority our free cash is used first to fund internal growth initiatives and internal investments then to continue to achieve our target of about a 20 or so payout ratio on dividends"	No	No	Yes	No	Yes
CUMMINS INC	27apr2010	"We will continue to focus on returning value to our shareholders through further stock repurchases and we remain committed to sustainable increases in our dividend and we will review this with our Board over the next few months"	Yes	No	No	Yes	No
PPL CORP	04feb2011	"As our regulated earnings grow we would expect to be able to enhance this dividend growth profile"	No	Yes	No	No	No

Appendix *1.B* reports examples of the content classification of dividend guidance instances reported in GR.

Appendix 1.C: Transcript of the Rationale behind the Introduction of the List.

This listing was inspired by the efforts of several individuals and is intended to be freely distributed or individual, non-commercial use. The initial goal was to identify companies that had increased their dividend n at least 25 consecutive years. But that definition was broadened to include additional companies that had aid higher dividends (without necessarily having increased the quarterly rate in every calendar year. Also ncluded (under the Contenders tab) are companies that have increased their dividend for 10-24 straight years nd (under the Challengers tab) companies that have increased their dividend for 5-9 straight years.

The dividend streaks are generally specified by the companies themselves. In some cases, however, here were differences between the length of the streak shown by outside sources and what was stated in ompany literature. Usually, the company's claim is shown, when it appears reasonable. For example, one ource showed that Vectren had increased its dividend for 31 straight years, but the company stated that its atest increase marked "the 48th consecutive year that Vectren and its predecessor companies have increased nnual dividends paid." In addition to not taking into account records of predecessor companies, some sources ppear to curtail streaks because of a lack of clear data as much as 25 years ago.

Other issues:

1. **Rounding errors**

Rounding errors can make it appear that a company did not raise its dividend, especially in the distant ast. For example, an adjusted payout of .012275, increased to .012325, could appear unchanged if both were ounded to .0123 by the data provider.

2. **Splits/Stock Dividends**

Splits/Stock Dividends may not always result in accurate adjustment of prior dividends. This is specially true if the split were at a ratio of 6-for-5 or higher, or if a stock dividend of 5% or less was paid. In ome cases, a firm states that it is "maintaining" a dividend rate following a stock dividend, but that, in fact, is n increase. So, for example, a company may start the year paying a rate of 10¢/share and finish the year by aying 10¢/share, but a 5% stock dividend adjusts the first figure to 9.6¢/share.

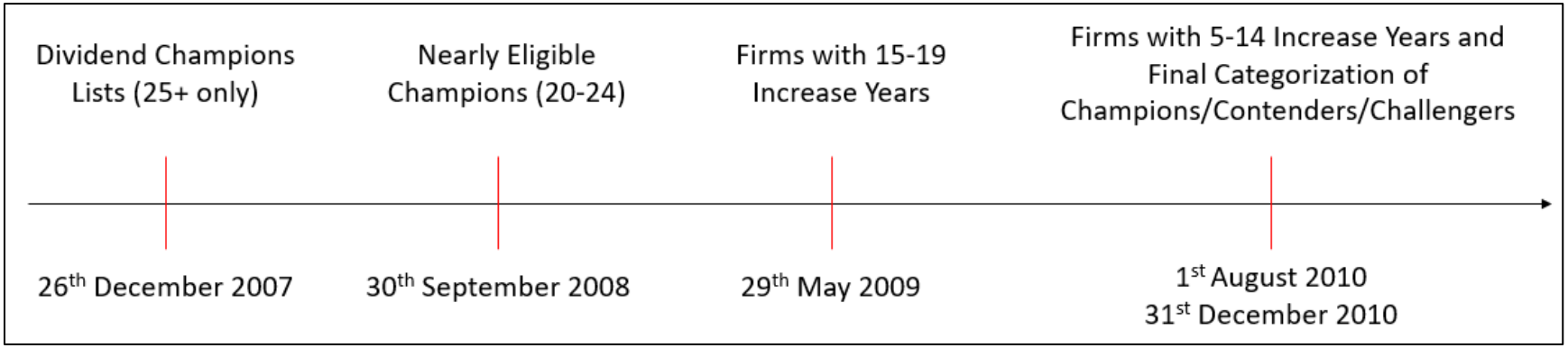
3. **Special Dividends**

Special Dividends might cause some sources to drop a company from a listing such as this one. For xample, if a firm increases its annual dividend from 30¢ to 40¢ per share, but pays a special (or "extra") ividend of $1 in the first year, then it could appear that it had reduced its payout from $1.30 to 40¢ per share, hus ending its streak. However, I don't think that such a company should be penalized for making an extra ayout, so these special dividends are generally factored out for this listing.

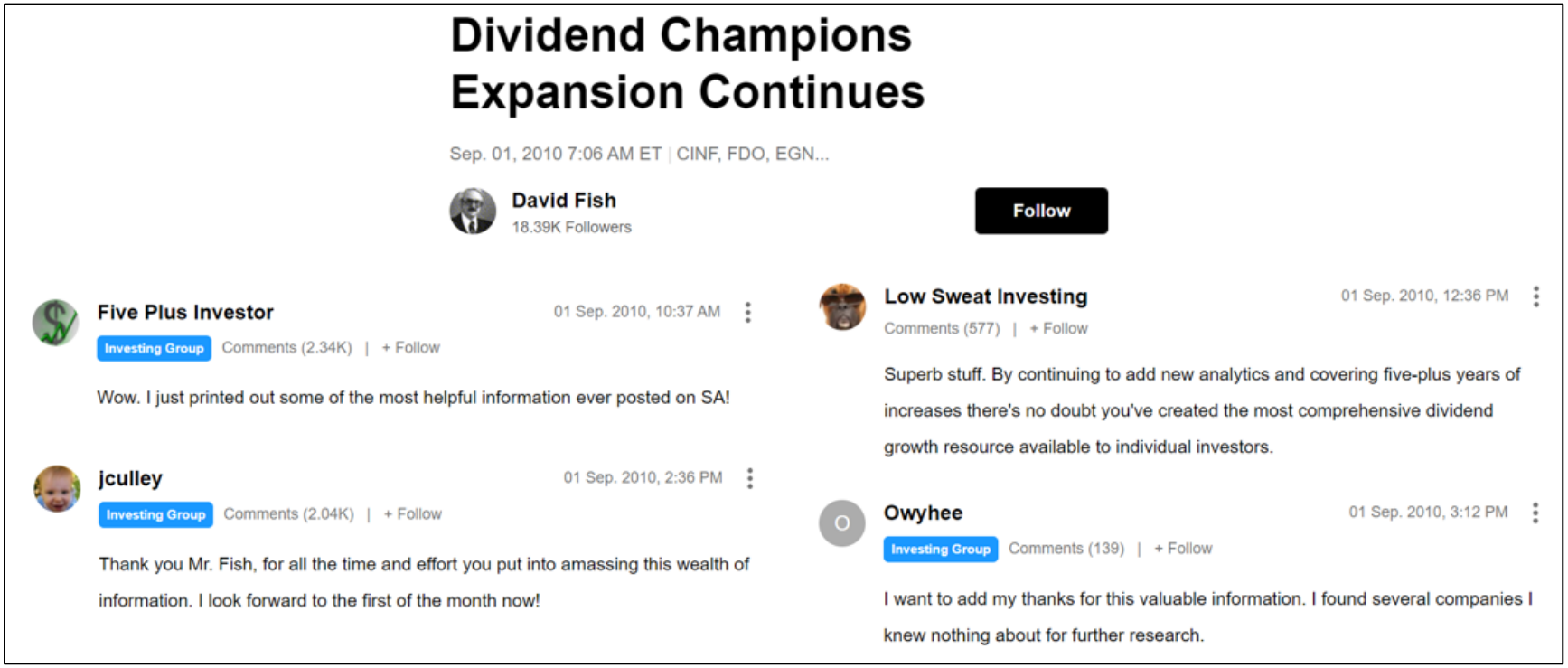
Appendix 1.C reports the transcript of the rationale behind the introduction of the List, as reported by Smyth (2025).

Appendix 1.D: The Categorization of the CCC Dividend List and dividend retail investors' comments on the List expansion

Panel A: Timeline of the CCC Dividend List Categorization



Panel B: Users' comments on the announcement of the inclusion of firms with a five-year dividend increase streak.



Appendix 1.D - Panel A shows the timeline of the changes in the List categorization up to the final structure as of the end of 2010. *Panel B* reports examples of investors' comments to the Seeking Alpha Article in which David Fish announced the inclusion of firms with five years of consecutive dividend increases to the List.

1.11 FIGURES

Figure 1.1: The role of the Dividend Aristocrats status in attracting funds from dividend-sensitive institutional investors

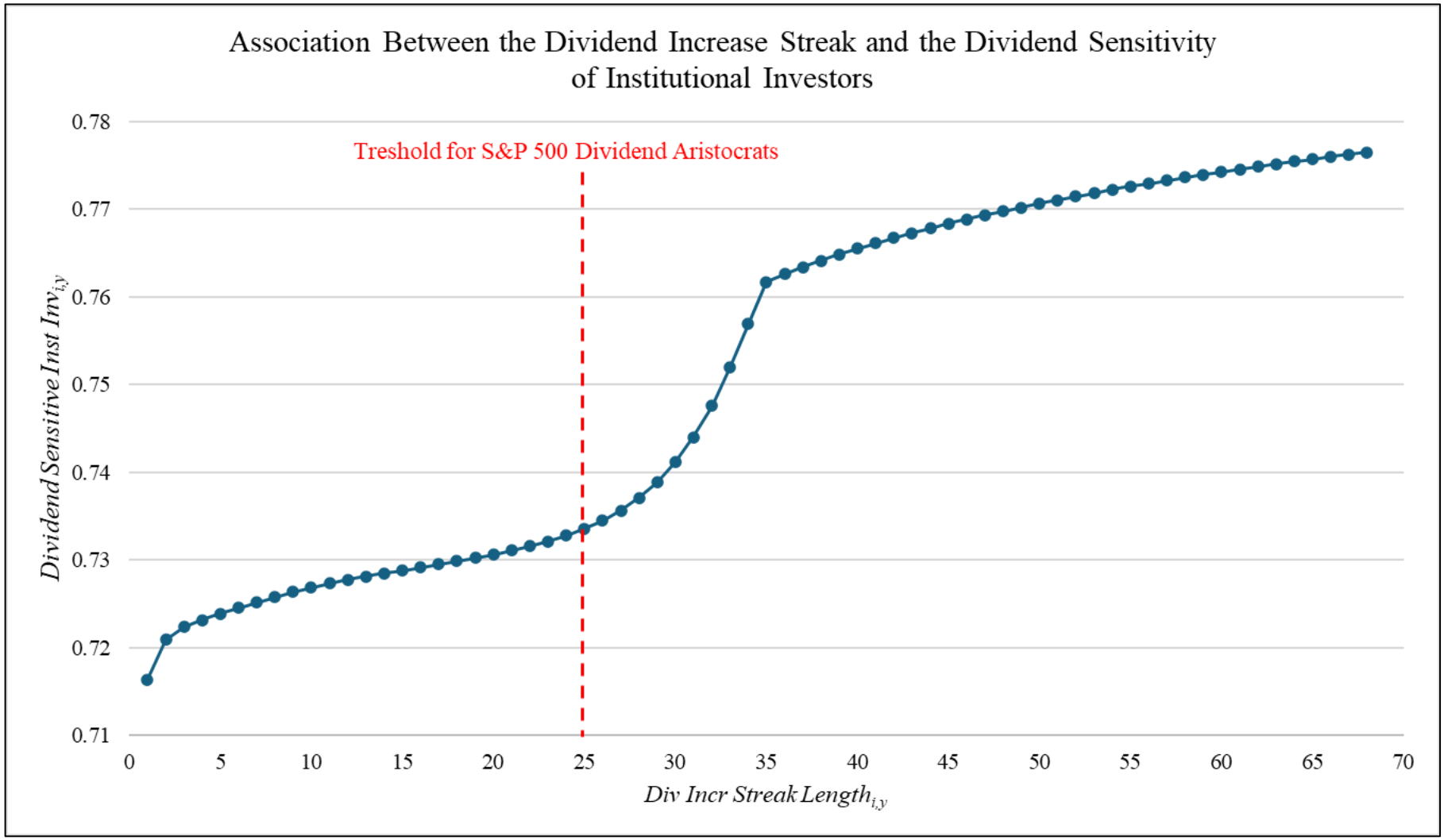


Figure 1.1 shows the relationship between the length of dividend increase streak (*Div Incr Streak Length*) and the dividend sensitivity of institutional investors (*Dividend Sensitive Inst Inv*). Div Incr Streak Length is defined as the number of consecutive years the firm has been increasing dividends. *Dividend Sensitive Inst Inv* measures the dividend preference of institutional investors at the firm-year. It is calculated by multiplying the percentage of market value owned by each institutional investor by the proportion of that investor's funds invested in dividend-paying firms. This value is then scaled by the percentage of the firm's market value owned by institutional investors. The figure shows the output of a locally weighted regression between Div Incr Streak Length and the predicted value of Dividend Sensitive Inst Inv calculated by estimating the model in OA3 - Column 1.

Figure 1.2: Event Timing

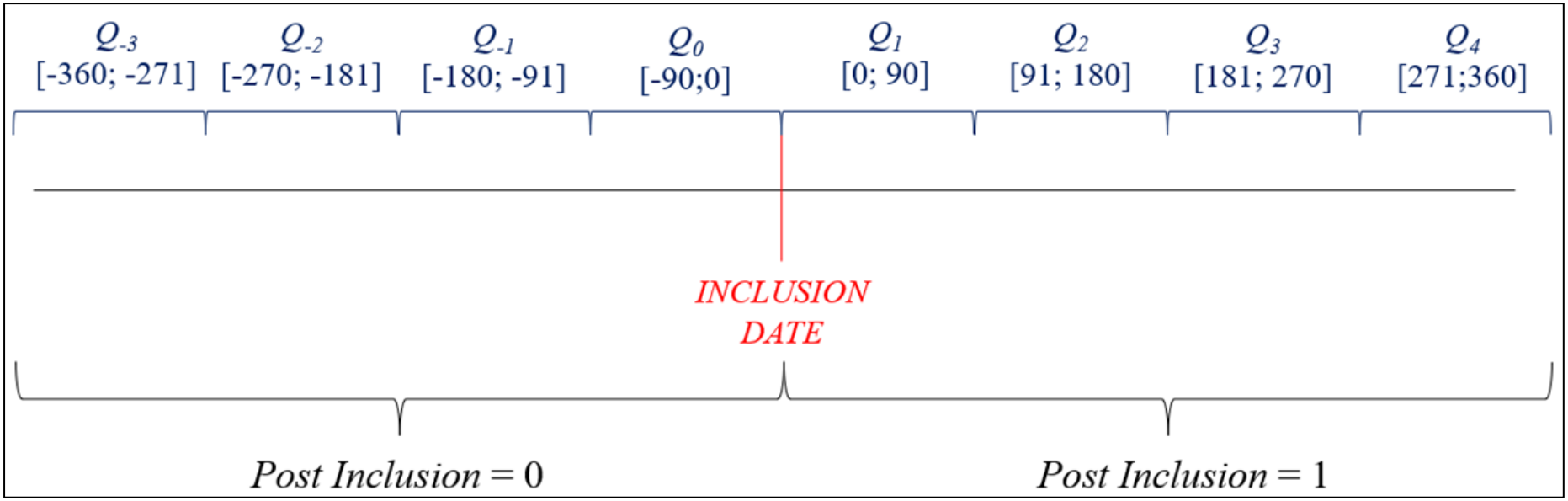


Figure 1.2 illustrates the event timing of the research design. For each unique firm-inclusion date in the 126-firm treatment group, I identify a corresponding firm-inclusion date in the control group. Each control firm operates in the same Fama-French 12 industry and is matched by minimizing the Euclidean distance between covariates, as shown in Table 2, Panel A. I then employ a rolling window approach to construct a panel dataset of firm quarters, including four quarters before and four quarters after the inclusion date.

Figure 1.3: Diff-in-Diff Graph

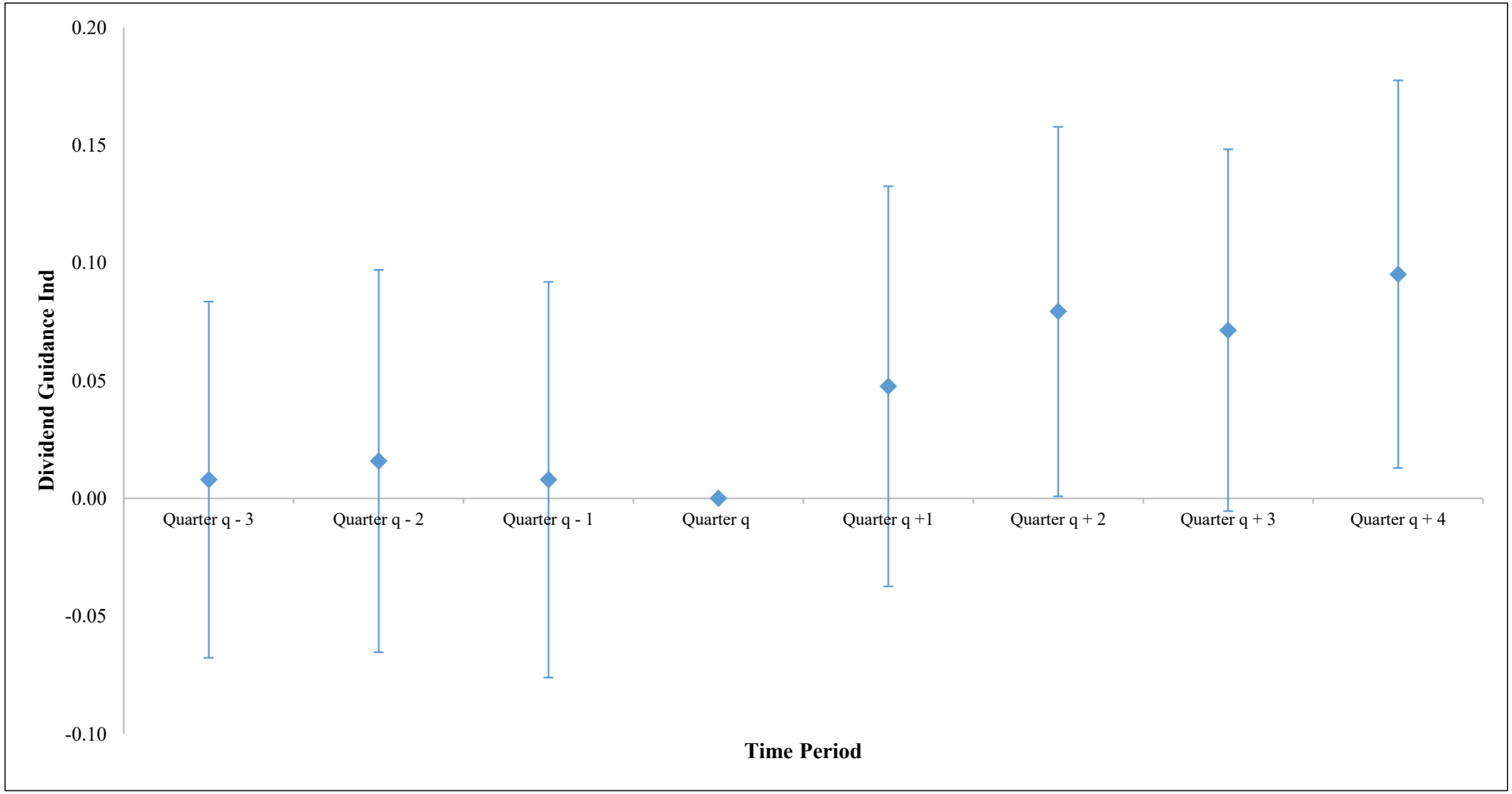


Figure 1.3 plots the event-time coefficients from the difference-in-differences specification reported in Table 1.4 – Panel A (Column 6), estimated around firms' inclusion in the dividend stock screener. Each point represents the estimated treatment effect for the corresponding event quarter, as defined in Figure 1,2. Vertical bars denote 90% confidence intervals. Standard errors are clustered at the firm level.

1.12 TABLES

Table 1.1: Sample Selection and Sample Distribution

Panel A: Treatment Group

Treatment Group	
	# Firms
S&P 1500 Dividend-Paying Firms Included in the CCC list between August 2010 and December 2010	157
Firms experiencing extraordinary events (e.g., M&A) during the sample period	(10)
Firms with no trade information on TAQ	(8)
Firms with missing control variables	(13)
Unique Firms in the Treatment Group	**126**

Panel B: Distribution by Inclusion Date

Inclusion Date	***Freq.***	***%***	***Cum %***
01 August 2010	58	46.03	46.03
01 September 2010	54	42.86	88.89
01 October 2010	9	7.14	96.03
01 December 2010	3	2.38	98.41
31 December 2010	2	1.59	100.00
Total	**126**	**100**	

Panel C: Distribution by Industry

Industry	***Freq.***	***%***	***Cum %***
Consumer Non-Durables	11	8.73	8.73
Consumer Durables	2	1.59	10.32
Manufacturing	13	10.32	20.63
Energy	5	3.97	24.60
Chemicals	5	3.97	28.57
Business Equipment	12	9.52	38.10
Telecommunications	3	2.38	40.48
Utilities	19	15.08	55.56
Wholesale, Retail, and Some Services	22	17.46	73.02
Health Care	5	3.97	76.98
Finance	10	7.94	84.92
Other	19	15.08	100.00
Total	**126**	**100**	

Panel D: Control Group

Control Group	
	# Firms
S&P1500 Dividend-Paying Firms with at least two years of consecutive dividend increases that are always or never included in the CCC during the sample period (i.e., August 2009 and December 2011)	202
Firms with no trade information on TAQ	(22)
Firms with missing control variables	(22)
Unique Firms in the Control Group with Entropy Balancing Matching (Table OA1, Columns 1-2)	158
Unique Firms in the Control Group with Nearest Neighbor Matching (Main Control Group)	**73**
Unique Firms included in the List in the three years following the end of the sample period (i.e.,January 2012-December 2014) (Table OA1, Columns 3-4).	106

Panel E: Dividend Guidance Events

Dividend Guidance Sample from GR	
	Guidance Events
Guidance instances from the LSEG Guidance Reports (GR) item "Common Stock Dividends Paid," issued within 360 days before or after the actual or assigned inclusion date.	605
Guidance instances that do not include the word "dividend"	(177)
Guidance instances issued during Analysts/Investors Days or Shareholder/Analyst Calls (i.e., settings for highly-qualified investors)	(41)
Final Sample of Div Guidance	**387**

Table 1.1 reports the sample selection process and the distribution by inclusion date and industry. Panel A reports the sample selection to identify the 126 firms for the treatment group. Panels B and C report the distribution of the treatment group by inclusion date and Fama-French 12 industry, respectively. Panel D reports the sample selection process to identify the firms used in the control group. Panel E shows the sample selection of dividend guidance instances.

Table 1.2: Covariates Balance in Nearest Neighbor Matching and Descriptive Statistics

Panel A: Covariates Balance in Nearest Neighbor Matching

	Treated Firms			*Control Firms*			*Differences*
Variables - *First Available FY before Inclusion*	#	Mean	p50	#	Mean	p50	*in Mean*
ln(Market Value) $_y$	126	8.5040	8.4505	73	8.5555	8.3969	-0.0514
ln(Market-to-Book) $_y$	126	1.2407	1.1514	73	1.2213	1.1594	0.0194
Cash $_y$	126	0.1194	0.0781	73	0.0983	0.0812	0.0211
ROA $_y$	126	0.1226	0.1047	73	0.1126	0.1080	0.0100
Leverage $_y$	126	2.8556	2.2393	73	2.7230	2.2035	0.1326
CAPEX $_y$	126	0.0556	0.0416	73	0.0389	0.0337	0.0167***
Div Yield $_y$	126	0.0299	0.0274	73	0.0310	0.0238	-0.0010

Panel B: Descriptive Statistics

Variable	N	Mean	Standard Deviation	p25	p50	p75
Dividend Guidance Variables (Quarterly) - Tables 4-5-6						
Div Guidance	2,016	0.1324	0.3391	0.0000	0.0000	0.0000
Div Guidance Count	2,016	0.1920	0.5735	0.0000	0.0000	0.0000
Cons Div Increases Guid	2,016	0.0313	0.1740	0.0000	0.0000	0.0000
Div Growth Guid	2,016	0.0561	0.2301	0.0000	0.0000	0.0000
Target Payout Ratio Guid	2,016	0.0526	0.2232	0.0000	0.0000	0.0000
Shareholder Return Guid	2,016	0.0298	0.1700	0.0000	0.0000	0.0000
Strategic Capital Allocation Guid	2,016	0.0640	0.2448	0.0000	0.0000	0.0000
Retail and Institutional Trades Variables (Daily) - Table 3						
Ret Num Trades	16,002	0.5071	1.1704	0.0460	0.1660	0.5000
Ret Vol Trades	16,002	0.1760	0.6024	0.0094	0.0361	0.1262
Inst Num Trades	16,002	0.1279	0.3566	0.0040	0.0220	0.1080
Inst Vol Trades	16,002	0.5362	1.9893	0.0134	0.0800	0.3546
Buyback and EPS Guidance Variables (Quarterly) - Table 5 Panel B						
Buyback Guidance	2,016	0.1190	0.3239	0.0000	0.0000	0.0000
Buyback Guidance Count	2,016	0.3056	0.4608	0.0000	0.0000	1.0000
EPS Guidance	2,016	0.1711	0.5582	0.0000	0.0000	0.0000
EPS Guidance Count	2,016	0.6553	1.3986	0.0000	0.0000	1.0000
Market Reaction and Earnings Surprise (Guidance) - Table 7						
CAR	384	0.0027	0.0318	-0.0134	0.0010	0.0139
Positive EA Surprise	384	0.0008	0.0016	0.0000	0.0000	0.0009
Negative EA Surprise	384	0.0002	0.0006	0.0000	0.0000	0.0000
% ΔDiv	384	0.0155	0.0617	0.0000	0.0000	0.0000
Control Variables (Quarterly)						
ln(Market Value) $_q$	2,016	8.5782	1.3770	7.4841	8.4455	9.6040
ln(Market-to-Book) $_q$	2,016	1.2850	0.3939	1.0407	1.2261	1.4968
Cash $_q$	2,016	0.0968	0.0996	0.0231	0.0636	0.1370
ROA $_q$	2,016	0.0299	0.0207	0.0148	0.0253	0.0395
Leverage $_q$	2,016	3.3624	2.2123	1.8014	2.5122	4.1007
CAPEX $_q$	2,016	0.0277	0.0297	0.0064	0.0172	0.0387
Div Yield $_q$	2,016	0.0166	0.0126	0.0066	0.0134	0.0242

Table 1.2 presents covariates balance in the matching approach (Panel A) and Descriptive Statistics (Panel B). Panel A reports data on 126 matched pairs of firms, divided between the treatment and control groups. Firm characteristics are measured as of the last fiscal year-end before the inclusion date. Each included firm is matched with a control firm from the same Fama-French 12 industry, selected based on minimal differences in firm characteristics. Panel B provides descriptive statistics for the main variables used in the analysis. All variables are defined in Appendix A.

Table 1.3: Retail and Institutional Trades around Inclusion in the List

Panel A: Retail Investor Trades around the Inclusion Date

Dependent Variable	*Ret Num Trades*		*Ret Vol Trades*	
	[-63;+63] Trading Days			
	(1)	(2)	(3)	(4)
Post Inclusion	***0.051******	***0.101******	***0.013****	***0.073******
	(3.354)	***(3.677)***	***(2.575)***	***(3.138)***
Regression Type	*OLS*	*Poisson*	*OLS*	*Poisson*
Fixed Effects:				
Inclusion Event	Y	Y	Y	Y
Observations	16,002	16,002	16,002	16,002
Adjusted/Psuedo R-squared	0.870	0.488	0.846	0.504

Panel B: Institutional Investor Trades around the Inclusion Date

Dependent Variable	*Inst Num Trades*		*Inst Vol Trades*	
	[-63;+63] Trading Days			
	(1)	(2)	(3)	(4)
Post Inclusion	***0.002***	***0.019***	***0.026***	***0.048***
	(0.658)	***(0.700)***	***(1.065)***	***(1.257)***
Regression Type	*OLS*	*Poisson*	*OLS*	*Poisson*
Fixed Effects:				
Inclusion Event	Y	Y	Y	Y
Observations	16,002	16,002	16,002	16,002
Adjusted/Psuedo R-squared	0.811	0.421	0.805	0.628

Table 1.3 presents the results for retail investors' trades trend (Panel A) and institutional investors' trades trend (Panel B) around List inclusion. I limit the time window to one quarter before and after the inclusion date (i.e., [-63; +63] trading days) to ensure both the pre- and post-period have at least one quarterly earnings announcement. See Figure 2 for additional details on the identification of the firm quarters in the dataset. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 1.4: The Effect of List Inclusion on Managers' Issuance of Dividend Guidance

Panel A: The Effect of List Inclusion on the Presence of Dividend Guidance

Dependent Variable	*Div Guidance*					
	(1)	(2)	(3)	(4)	(5)	(6)
Post Inclusion	***0.063****	***0.060****	***0.052****	*-0.002*		
	(2.839)	***(2.616)***	***(2.049)***	*(-0.126)*		
Included Firm				*0.040*	*0.058***	
				(1.450)	*(2.042)*	
Post Inclusion * Included Firm				***0.065****	***0.065****	***0.065****
				(2.395)	**(2.335)**	***(2.380)***
ln(Market Value)		*0.063****	*0.064*		*0.034****	*0.066*
		(5.064)	*(0.472)*		*(3.461)*	*(0.674)*
ln(Market-to-Book)		*-0.011*	*0.042*		*0.021*	*-0.099*
		(-0.221)	*(0.185)*		*(0.536)*	*(-0.636)*
Cash		*-0.244*	*-0.114*		*-0.129*	*0.139*
		(-1.608)	*(-0.416)*		*(-1.085)*	*(0.704)*
ROA		*0.503*	*0.045*		*0.411*	*0.038*
		(0.702)	*(0.057)*		*(0.710)*	*(0.065)*
Leverage		*0.002*	*-0.003*		*0.004*	*0.029*
		(0.159)	*(-0.080)*		*(0.447)*	*(0.824)*
CAPEX		*-0.754**	*0.378*		*-0.856***	*0.230*
		(-1.751)	*(0.823)*		*(-2.306)*	*(0.621)*
Div Yield		*4.442****	*1.318*		*3.542****	*0.859*
		(3.969)	*(0.925)*		*(4.055)*	*(0.894)*
Fixed Effects:						
Industry	N	Y	N	N	Y	N
Inclusion Event	N	N	Y	N	N	Y
Quarter Trend	N	N	N	N	Y	Y
Observations	1,008	1,008	1,008	2,016	2,016	2,016
Adjusted R-squared	0.006	0.093	0.243	0.014	0.069	0.276

Panel B: The Effect of List Inclusion on the Intensity of Dividend Guidance

Dependent Variable	*Div Guidance Count*					
	(1)	(2)	(3)	(4)	(5)	(6)
Post Inclusion	***0.432******	***0.412******	***0.306****	*-0.045*		
	(2.917)	***(2.719)***	***(1.718)***	*(-0.255)*		
Included Firm				*0.386*	*0.515**	
				(1.393)	*(1.817)*	
Post Inclusion * Included Firm				***0.477****	***0.461****	***0.493****
				(2.069)	**(1.999)**	***(2.004)***
ln(Market Value)		*0.445****	*1.484*		*0.312****	*0.995*
		(4.770)	*(1.409)*		*(3.920)*	*(1.019)*
ln(Market-to-Book)		*-0.126*	*-0.762*		*0.112*	*-1.207*
		(-0.338)	*(-0.473)*		*(0.349)*	*(-0.939)*
Cash		*-2.571**	*-5.697***		*-0.427*	*-0.738*
		(-1.742)	*(-2.171)*		*(-0.308)*	*(-0.391)*
ROA		*5.692*	*1.872*		*1.780*	*-1.924*
		(0.815)	*(0.227)*		*(0.261)*	*(-0.343)*
Leverage		*0.057*	*0.011*		*0.049*	*0.189*
		(0.696)	*(0.046)*		*(0.745)*	*(0.895)*
CAPEX		*-7.040*	*3.890*		*-5.689*	*0.261*
		(-1.481)	*(0.595)*		*(-1.305)*	*(0.049)*
Div Yield		*21.731****	*-1.384*		*23.443****	*6.982*
		(3.184)	*(-0.111)*		*(3.790)*	*(0.760)*
Fixed Effects:						
Industry	N	Y	N	N	Y	N
Inclusion Event	N	N	Y	N	N	Y
Quarter Trend	N	N	N	N	Y	Y
Observations	1,008	992	552	2,016	2,016	856
Pseudo R-squared	0.009	0.124	0.193	0.022	0.108	0.182

Table 1.4 reports the effect of List Inclusion on the presence of dividend guidance through an OLS model (Panel A), and the intensity of dividend guidance through a Poisson model (Panel B). Both Panels report results from a pre-post research design (Columns 1-3) and a difference-in-difference analysis (Columns 4-6), where each unique firm-inclusion date in the treatment group has been matched with a control firm-inclusion date through a nearest neighbor matching approach outlined in Table 2 – Panel B. Table 3 – Panel A dependent variable is *Div Guidance*. Table 3 – Panel B dependent variable is *Div Guidance Count*. See Figure 2 for additional details on the identification of the firm quarters in the dataset. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 1.5: Pre-Parallel Trends and Falsification Test on Buyback and EPS Guidance

Panel A: Pre-Parallel Trends – Fictitious Inclusion Date One Year Before the Actual One

Dependent Variable	*Div Guidance*					
	(1)	(2)	(3)	(4)	(5)	(6)
Post Inclusion	***0.008***	***-0.016***	***-0.003***	*0.016*		
	(0.398)	***(-0.774)***	***(-0.118)***	*(1.134)*		
Included Firm				*0.050**	*0.074****	
				(1.939)	*(2.763)*	
Post Inclusion * Included Firm				***-0.008***	***-0.012***	***-0.013***
				(-0.326)	**(-0.491)**	***(-0.513)***
ln(Market Value)		0.039***	0.013		0.024**	-0.050
		(3.152)	(0.177)		(2.526)	(-0.750)
ln(Market-to-Book)		0.021	-0.080		0.046	0.031
		(0.568)	(-0.932)		(1.350)	(0.346)
Cash		-0.271**	0.044		-0.248**	-0.140
		(-2.226)	(0.214)		(-2.157)	(-0.905)
ROA		-0.804	-0.751		-0.492	-0.415
		(-1.407)	(-1.339)		(-1.008)	(-0.900)
Leverage		-0.006	-0.008		-0.002	-0.015
		(-1.137)	(-0.596)		(-0.312)	(-1.247)
CAPEX		-1.025***	0.068		-0.796***	-0.120
		(-3.199)	(0.231)		(-2.968)	(-0.473)
Div Yield		5.046***	0.761		3.800***	1.720**
		(4.587)	(0.643)		(4.569)	(1.979)
Fixed Effects:						
Industry	N	Y	N	N	Y	N
Inclusion Event	N	N	Y	N	N	Y
Quarter Trend	N	N	N	N	Y	Y
Observations	1,008	1,008	1,008	2,016	2,016	2,016
Adjusted R-squared	-0.001	0.095	0.226	0.004	0.062	0.264

Panel B: Falsification Test on Buyback and EPS Guidance

Dependent Variable	*Byb Guidance*	*Byb Guidance Count*	*EPS Guidance*	*EPS Guidance Count*
	(1)	(2)	(3)	(4)
Post Inclusion * Included Firm	***-0.019***	***-0.211***	***0.001***	***0.065***
	(-0.787)	***(-0.810)***	***(0.031)***	***(0.474)***
ln(Market Value)	-0.093	0.863	0.074	0.569
	(-1.003)	(0.574)	(0.678)	(1.152)
ln(Market-to-Book)	0.157	0.050	-0.270	-0.973
	(1.162)	(0.025)	(-1.588)	(-1.511)
Cash	0.301*	-1.411	0.626***	2.660**
	(1.825)	(-0.473)	(2.938)	(2.119)
ROA	0.231	2.704	-0.194	-3.970
	(0.446)	(0.312)	(-0.279)	(-1.301)
Leverage	-0.027	-0.032	0.037	0.043
	(-1.079)	(-0.084)	(1.539)	(0.578)
CAPEX	-0.076	-3.689	0.266	2.476
	(-0.242)	(-0.755)	(0.520)	(0.932)
Div Yield	-0.009	1.196	0.323	-0.428
	(-0.012)	(0.120)	(0.299)	(-0.087)
Regression Type	*OLS*	*Poisson*	*OLS*	*Poisson*
Fixed Effects:				
Inclusion Event	Y	Y	Y	Y
Quarter Trend	Y	Y	Y	Y
Observations	2,016	696	2,016	1,192
Adjusted/Pseudo R-squared	0.365	0.201	0.531	0.310

Table 1.5 reports two placebo tests. Panel A test for the validity of the pre-parallel trends assumption by estimating the same specification as in Table 4 – Panel A but replacing every inclusion date with the inclusion date one year before. Panel B test for the effect of List inclusion on two commonly disclosed metrics: buyback guidance (Columns 1-2) and EPS guidance (Columns 3-4). All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 1.6: The Effect of List Inclusion on Guidance Content

Dependent Variable	*Cons Div Increases Guid*	*Div Growth Guid*	*Target Payout Ratio Guid*	*Shareholder Return Guid*	*Strategic Capital Allocation Guid*
	(1)	(2)	(3)	(4)	(5)
Post Inclusion * Included Firm	***0.025***	***0.030***	***0.069******	***0.009***	***0.017***
	(1.628)	***(1.509)***	***(4.009)***	***(0.581)***	***(0.867)***
ln(Market Value)	-0.018	0.110	0.036	-0.028	0.036
	(-0.312)	(1.563)	(0.708)	(-0.663)	(0.708)
ln(Market-to-Book)	0.020	-0.044	-0.047	0.008	-0.047
	(0.334)	(-0.447)	(-0.531)	(0.164)	(-0.531)
Cash	-0.092	-0.024	0.106	0.075	0.106
	(-0.961)	(-0.180)	(0.965)	(0.658)	(0.965)
ROA	-0.036	-0.161	-0.069	-0.010	-0.069
	(-0.134)	(-0.420)	(-0.144)	(-0.042)	(-0.144)
Leverage	-0.006	0.012	-0.015	-0.007	-0.015
	(-0.577)	(0.574)	(-0.751)	(-0.485)	(-0.751)
CAPEX	0.131	-0.428*	-0.126	-0.009	-0.126
	(0.578)	(-1.661)	(-0.565)	(-0.060)	(-0.565)
Div Yield	-0.051	0.474	0.759	-0.591	0.759
	(-0.090)	(0.674)	(1.176)	(-1.393)	(1.176)
Fixed Effects:					
Inclusion Event	Y	Y	Y	Y	Y
Quarter Trend	Y	Y	Y	Y	Y
Observations	2,016	2,016	2,016	2,016	2,016
Adjusted R-squared	0.094	0.195	0.226	0.099	0.213

Table 1.6 reports the effect of List inclusion on the content of dividend guidance, identified by the five most discussed dividend-related topics (i.e., consecutive dividend increases, dividend growth, target payout ratio, shareholder return, and strategic capital allocation), as in Kaplan et al. (2025). All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 1.7: The Effect of List Inclusion on Market Reaction to Dividend Guidance

Dependent Variable	*CAR*			
	(1)	(2)	(3)	(4)
Post Inclusion	*-0.005*	*-0.007*		
	(-1.056)	*(-1.256)*		
Included Firm	*-0.005*	*-0.006*	-0.006	
	(-1.225)	*(-1.150)*	(-1.236)	
Post Inclusion * Included Firm	***0.011****	***0.013****	***0.014****	***0.021****
	(1.752)	***(1.876)***	***(1.909)***	***(2.471)***
Positive EA Surprise	4.334*	4.082*	3.649*	1.982
	(1.827)	(1.881)	(1.870)	(0.833)
Negative EA Surprise	-6.435	-6.796	-7.357*	-6.173
	(-1.582)	(-1.554)	(-1.758)	(-1.486)
% ΔDiv	0.064	0.066	0.072	0.156**
	(1.229)	(1.401)	(1.617)	(2.136)
ln(Market Value)		0.001	0.000	0.008
		(0.451)	(0.140)	(0.130)
ln(Market-to-Book)		0.002	-0.001	-0.065
		(0.250)	(-0.107)	(-0.824)
Cash		0.030	0.030	0.048
		(0.939)	(0.988)	(0.584)
ROA		-0.290	-0.248	-0.637*
		(-1.014)	(-0.926)	(-1.776)
Leverage		-0.001	-0.001	0.003
		(-0.690)	(-0.496)	(0.272)
CAPEX		-0.005	-0.023	-0.075
		(-0.051)	(-0.210)	(-0.373)
Div Yield		-0.078	0.010	-0.143
		(-0.460)	(0.054)	(-0.469)
Fixed Effects:				
Inclusion Event	N	N	N	Y
Quarter Trend	N	N	Y	Y
Observations	384	384	384	384
Adjusted R-squared	0.081	0.082	0.102	0.291

Table 1.7 reports the effect of List inclusion on the market reaction to dividend guidance instances. The dependent variable, *CAR*, is the cumulative abnormal reaction to dividend guidance events. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

CHAPTER 2: Commitment through Forecasting: Managerial Buyback Guidance and Payout Policy

with Zachary Kaplan (Washington University in St. Louis), Lauren Vollon (University of Notre Dame), and Xiaoxi Wu (Bocconi University)

2.1 INTRODUCTION

The agency costs of free cash flow have long been recognized as a central concern in accounting and finance research, as excess cash can enable managerial opportunism in the absence of sufficient discipline from external capital markets (e.g., Jensen 1986; DeAngelo and DeAngelo 2006). In this context, dividends have traditionally played an important governance role by serving as a credible commitment to return excess funds to shareholders (e.g., DeAngelo et al. 2004; Kaplan and Pérez-Cavazos 2022). However, in recent decades, firms have moved away from dividends as their primary payout mechanism in favor of share repurchases (e.g., Skinner 2008; Leary and Michaely 2011). Yet, unlike seldom-cut dividends, repurchases are highly discretionary and have been empirically linked to opportunistic behavior, including earnings management (Hribar et al. 2006), insider trading (Fried 2013), and market timing (Dittmar and Field 2015). The shift toward repurchases, along with the discretion managers exercise over their timing, raises questions about whether payout policy, in the aggregate, continues to function effectively as a governance mechanism for mitigating agency problems.

In this study, we introduce forward-looking buyback guidance as a voluntary disclosure mechanism through which managers credibly commit to financial policies that reduce agency conflicts (Verrecchia 1983; Beyer et al. 2010). We argue buyback guidance signals a firm's intent to return excess cash to shareholders over the long-term, helping to reduce the uncertainty inherent in repurchase authorizations (e.g., Stephens and Weisbach 1998). Because authorizations are mandatory for all firms and non-binding, they reveal little about a firm's true repurchase motives, whereas voluntary buyback guidance can signal a credible long-term commitment. The value of this disclosure-based commitment is greatest for mature firms with limited growth opportunities and higher agency frictions, as they benefit from reassuring investors that excess cash will be returned rather than over-invested. In contrast, firms focused on timing repurchases to buy shares when undervalued will avoid guidance to preserve flexibility, as making an upfront commitment might increase the effective cost of repurchasing for these firms. Overall, we hypothesize that guidance decisions reflect firms' underlying

repurchase motives, producing a separating equilibrium in which only firms committed to sustained buybacks choose to guide.

We test our hypothesis using a novel dataset of 4,653 buyback guidance events for S&P 1500 firms over the years 2011–2020, using LSEG Guidance Reports (GR) data and employing ChatGPT to classify forward-looking guidance referencing either the number or value of shares expected to be repurchased. Approximately 75% of these forecasts pertain to repurchases expected within the current fiscal year. To ensure that all firms in our sample had an opportunity to issue guidance, we restrict our firm-year sample to firms with positive repurchases in the year, allowing us to compare those that chose to guide ("guiders") with those that did not ("non-guiders"). In our final sample of 6,972 repurchasing firm-years, 49% of the firms in our sample issue at least one buyback forecast during the sample period and 23% of firm-years include at least one forecast.

We begin our analysis by linking buyback guidance to valuation, showing that firms choosing to guide are those for whom investors are likely to reward a disciplined payout policy, and that guidance brings this valuation benefit forward into the stock price. Guiders are mature, cash-rich firms that have not raised equity recently and, from a life-cycle perspective, would be expected to enhance value by distributing excess cash (e.g., Faulkender and Wang 2006; Dickinson 2011; McKeon 2015; Farre-Mensa et al. 2024). In addition, guiders tend to be accretive repurchasers with E/P ratios above prevailing interest rates, implying that repurchases increase earnings per share (Hribar et al. 2006; Ben-David and Chinco 2023). Because valuations often rely on earnings multiples, accretion provides a valuation incentive to commit to repurchases (Penman 1998; Bradshaw 2002).

We provide three pieces of evidence that buyback guidance has valuation consequences consistent with a credible commitment to return capital. First, guidance announcements generate positive abnormal returns: 0.3% on average, increasing to 0.5% for a firm's first forecast of the year and 0.5% for guidance instances bundled with earnings announcements. When issued alongside repurchase authorizations, guidance adds an incremental 0.8%, suggesting that it helps reduce uncertainty around open-ended authorizations. Second, repurchases by guiders are valued more positively than those by non-guiders: higher repurchases are more strongly associated with returns for guiders, even after controlling for EPS guidance. This stronger association is consistent with the market interpreting repurchases by guiders as good news, providing a potential explanation for why firms choose to bring that information forward through guidance. Third, we find that the market penalizes guiders more when they issue guidance announcing the suspension of buybacks. Although such suspension

guidance is rare, the larger ex-post penalty suggests that firms have strong incentives to follow through on their original repurchase commitments.

Our valuation tests establish that investors respond positively to buyback guidance, but to understand how guidance mitigates agency costs, it is critical to examine both the information content of the guidance and the nature of the repurchase activity that underlies this response. We begin by assessing whether buyback forecasts meaningfully anchor investor expectations and shape payout behavior. While repurchase guidance is more accurate than a random walk benchmark, it is significantly less accurate than EPS guidance, despite managers retaining full discretion over repurchases. This gap in precision suggests that buyback guidance reflects a credible commitment rather than a fixed target. Supporting this interpretation, firms are more likely to meet or exceed their buyback guidance target than to meet or beat their EPS guidance or simply match their prior-year repurchases. Thus, buyback guidance appears to set a floor on expected repurchases while preserving the flexibility to exceed it, a feature that distinguishes it from dividends, which tend to be sticky and downwardly rigid.

We then explore whether guidance helps reduce agency costs by fostering sustained and predictable repurchase policies, and whether these patterns differ from those observed for dividends. Guiders differ meaningfully from non-guiders along several dimensions. First, repurchase behavior is significantly more persistent for guiders: those that repurchase over 1% of market value in one year are far more likely to continue repurchasing the next year than non-guiders. This persistence is accompanied by lower repurchase volatility: guiders display less quarter-to-quarter variation in repurchase activity compared to non-guiders. Importantly, the decision to guide is itself persistent and predictive of elevated future repurchase levels. On average, guiders repurchase 1.0% more of market value in the year following guidance, 0.5% more in the second year, and 0.3% more in the third, relative to non-guiders. This long-horizon signal distinguishes buyback guidance from other mechanisms, such as accelerated share repurchases, which constrain flexibility but do not convey similar multi-year repurchase commitments. Finally, we find that guiders adjust repurchases in response to changes in operating income, primarily by scaling repurchases up when profitability increases, relative to non-guiders. This contrasts with recent evidence on dividends, which shows a near-zero adjustment of dividends to profitability changes (e.g., Skinner 2008; Leary and Michaely 2011). Thus, we find that while firms tend to issue conservative buyback guidance, the decision to guide reflects a broader commitment to reduce agency concerns by paying out cash as it is earned.

Lastly, we examine the costs of guidance by comparing how guiders and non-guiders profitably trade in their own stock. Repurchasing shares at lower prices benefits long-term shareholders but requires flexibility in timing and quantity. Our evidence shows that guiders pay a significant premium relative to value-weighted average prices compared to non-guiders, about 2% more within a year, increasing to 5% over a three-year horizon. These patterns suggest that while some non-guiders focus on market timing, guiders deliberately forgo this flexibility to maintain a steady, credible payout strategy.[22] Accepting these higher costs reinforces the signal that a firm is committed to returning excess cash, rather than pursuing private benefits or empire building. By accepting higher repurchase costs that reflect their commitment to steady capital return, guiders credibly differentiate themselves from firms timing the market, therefore sustaining a separating equilibrium in which only genuinely disciplined firms choose to guide.

Our baseline analyses compare guiders to non-guiders, a group likely to include firms with varying repurchase motives and reasons for withholding guidance. To better capture managerial repurchase intent, we use GR data to detect firm-years in which non-guiding firms describe their repurchase strategy as contingent on the stock's undervaluation. This sharper comparison allows us to contrast firms that guide to signal a sustained commitment to capital return with those that avoid guidance to preserve flexibility for market timing. While firms are more likely to use "undervaluation" language in years of high repurchase activity, such statements do not predict future repurchases and are not associated with more profitable or less volatile execution. These patterns suggest that undervaluation-based framing serves more as a retrospective explanation than a credible forward-looking signal. In contrast, quantitative guidance is followed by steadier and more persistent repurchase behavior, reinforcing our interpretation that buyback guidance reflects a credible and costly commitment rather than flexible intent repackaged as disclosure.

We make several contributions to the literature. First, our findings help reconcile the literature on capital structure, which suggests firms return excess cash to shareholders (e.g., Myers and Majluf 1984), with the literature on repurchases (e.g., Hribar et al. 2006; Dittmar and Field 2015), which primarily highlights firms' opportunistic use of share repurchases. The opportunism stems from the nature of repurchase authorizations, which are mandatory but do not obligate managers to repurchase the authorized shares (e.g., Stephens and Weisbach 1998),

[22] We find that over 90% of guiders forecast using dollar values rather than number of shares, consistent with a repurchase strategy that is primarily driven by cash, rather than market timing opportunities.

prompting some managers to use additional tools to signal their true repurchase motives. Building on this literature, we propose buyback guidance as a novel mechanism for managers to communicate long-horizon intentions about future repurchase activity. We emphasize that the repurchase policies of buyback guiders differ meaningfully from both non-guiders and traditional dividend payers, underscoring that repurchase behavior and repurchase guidance decisions evolve endogenously.

Second, we illustrate that buyback-guiding firms have different and more positive market reactions to their repurchases. Although firms tend to repurchase when valuation and earnings decline (e.g., Jagannathan, Stephens, and Weisbach 2000; Grullon and Michaely 2004), guidance signals a more deliberate capital return strategy. We find that markets respond positively to these guidance announcements and punish guiders more when they suspend repurchases, suggesting that investors interpret guidance as a credible commitment. Guiders tend to be mature firms with excess cash and the ability to make accretive repurchases (i.e., firms for whom resolving agency frictions through sustained payouts is particularly value-enhancing). Overall, we show that buyback guidance shapes the valuation of repurchase activity, with important implications for how firms communicate and execute payout policy.

Finally, we contribute to the broad literature on management guidance, which has traditionally focused on earnings and revenue forecasts, by studying a novel guidance measure over which managers have greater reporting discretion (e.g., Call et al. 2024). From a disclosure perspective, our study offers two key novelties relative to these prior settings. First, voluntary buyback guidance reveals the firm's underlying repurchasing motive, distinguishing firms committed to returning excess cash from those that prioritize flexibility or market timing. Second, we show that guidance imposes real economic costs: firms that guide give up the ability to time repurchases for maximum profitability. Consistent with this, guiders repurchase more, and exhibit greater persistence and lower volatility in repurchase activity. These patterns suggest that private information about long-term repurchase policy evolves alongside disclosure policy, consistent with models of dynamic disclosure in which persistent guidance choices embed time-invariant information about underlying firm characteristics (e.g., Einhorn and Ziv 2008, Heinle et al 2025).

2.2. INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

We leverage a novel database of buyback guidance and investigate when firms issue such guidance. We expect buyback guidance to endogenously evolve with payout policy The guidance decision reflects a trade-off between the valuation benefits of committing to steady

repurchases through guidance, which helps mitigate agency costs of free cash flow, and the opportunity costs of reducing flexibility that limits guiders discretion to time repurchases and buy shares at lower prices. In this section, we first review the institutional background of share repurchases and then formally develop the hypotheses we will use to test for this trade-off.

2.2.1 Institutional Background

Prior to 1982, U.S. firms faced regulatory constraints that effectively prohibited open market share repurchases, as such activity could trigger allegations of stock price manipulation. As a result, firms primarily reduced their share count through tender offers, while dividends remained the dominant form of shareholder payout. Subsequent to SEC rule 10b-18 that offered companies a safe harbor for open market repurchases, buybacks increased rapidly. By the 2000s, repurchases surpassed dividends as the most prevalent form of payout in the United States (e.g., Skinner 2008).

Although dividends and repurchases have equivalent effects on capital structure, they differ markedly in their implementation. Dividends are highly persistent, rarely cut, and typically increased annually in fixed increments (e.g., Lintner 1956; DeAngelo et al. 2004; Salerno 2025), limiting their ability to adjust to changes in profitability. This rigidity constrains the ability for dividends to remove excess cash from the control of managers, especially because earnings shocks and investment opportunities can be transitory. In contrast, repurchases offer greater flexibility, enabling firms to better align payouts with changing cash flow conditions. However, this flexibility makes repurchases less effective for reducing agency costs if managers exploit it to time the market or execute more self-serving trades (e.g., Fried 2013; Dittmar and Field 2015). We explore whether firms use buyback guidance to address these concerns and credibly signal a long-term and sustained commitment to returning capital.[23]

An important institutional feature of open-market share repurchases is that the board must authorize the repurchase before the firm can repurchase its own shares. These authorizations are mandatory for all firms and do not require firms to repurchase the authorized shares. Supporting this notion, seventy-five percent of the repurchases in our sample do not expire, so the option to repurchase shares once authorized remains until the manager exercises

[23] An example of how the importance of the dividend could diminish its ability to remove excess cash comes from Chevron's Q1 2025 earnings call (May 1, 2025), where CEO Mike Wirth framed the hierarchy of Chevron's capital allocation strategy: "First priority is to grow the dividend … Second is to invest in the business … And then buybacks with a through-the-cycle approach." An interview with an investor relations executive confirmed that Chevron prioritized dividends over net present value investments, which highlights how a flexible but steady payout method can complement dividends in removing excess cash from the balance sheet. Chevron issues buyback guidance, and its repurchases are sensitive to changes in the price of oil (and thus expected profits), but not to changes in its share price.

it. As a result, there is considerable uncertainty about whether and when firms will repurchase the authorized shares. Early academic research documented positive abnormal returns around repurchase authorization announcements and identified a substantial post-announcement drift, consistent with the idea that authorizations convey positive information to the market (e.g., Ikenberry et al. 1995). However, subsequent work questioned the informativeness of these announcements, noting that many authorized buybacks are only partially executed or never undertaken at all, and argued that managers may use the discretion to trade for the firms' account to their private benefit (e.g., Stephens and Weisbach 1998; Chan et al. 2010; Fried 2013).

Accelerated Share Repurchases (ASRs), binding agreements with intermediaries to repurchase a fixed number of shares, typically at a price similar to the value-weighted average price over a short horizon, usually a quarter or less, have been proposed as a mechanism through which firms constrain their repurchase flexibility (e.g., Bargeron et al. 2011). Although ASRs offer a credible commitment to immediate repurchase activity, they are one-time transactions and do not convey information about a firm's longer-term repurchase intentions. Additionally, because the intermediary delivers the shares at the time the firm enters the agreement, ASRs facilitate market timing and earnings management (e.g., Kurt 2018; Chemmanur et al. 2022).

The study most closely related to ours is Bargeron et al. (2024), who examine voluntary disclosures about the firms' progress against authorizations: disclosures on the completion, suspension, or resumption following a suspension. They find that these updates generate market reactions and predict future repurchase activity, highlighting the informativeness of discretionary communication around buybacks. However, the disclosures they study provide short-horizon information and are often backward-looking. In contrast, buyback guidance is more frequent, explicitly forward-looking, and our study investigates its effects over long horizons, beyond the forecasted period. In addition, some of the disclosures investigated by Bargeron et al. (2024) provide qualitative historical information that are unlikely to be informative post-2004, when the SEC began to require the disclosure of monthly repurchase data in quarterly reports. Consistent with mandatory disclosure pre-empting voluntary disclosure, Bargeron et al. (2024) document that their repurchase disclosures decline after 2004.

2.2.2 Hypothesis Development

The agency costs of free cash flow theory (e.g., Jensen 1986) suggests that mature firms with limited investment opportunities can enhance firm value by committing to return excess cash to shareholders rather than retaining it for potentially inefficient uses. By committing to a steady repurchase policy through buyback guidance, firms reduce managerial discretion, thereby limiting the risk of inefficient overinvestment and reinforcing a shareholder-friendly capital allocation strategy. When firms with high cash flow and low growth prospects repurchase consistently, they effectively pre-commit to distributing resources to shareholders, thereby reducing the valuation discount associated with agency concerns. This signaling mechanism enables firms to bring forward the valuation benefits of their future repurchases by resolving uncertainty about managerial intent (e.g., Lundholm and Myers 2002).

H1: Firms that issue buyback guidance tend to be mature and face agency frictions, and they derive valuation benefits from providing such guidance.

Managers selectively provide guidance, a type of voluntary disclosure, when the benefits of doing so exceed the costs (e.g., Verrecchia 1983; Dye 1985). Recent theoretical work extends this cost-benefit framework to a multi-period setting by arguing that in providing a voluntary disclosure in the past, firms create the expectation they will continue to do so in the future (e.g., Einhorn and Ziv 2008; Cianciaruso and Sridhar 2018). This dynamic implies that managers' long-horizon information (i.e., beyond the current period) will influence the current period's disclosure decision.

We build on this intuition in considering the association between the decision to provide buyback guidance in the current year and firms' repurchase policy, evaluated over the current and subsequent years. We expect that guiders create expectations for their repurchases and thus will only guide when they make a commitment to a steady repurchase policy, which they would also be willing to disclose in future years. This reduces the flexibility to repurchase shares profitably or engage in more self-interested forms of repurchases, such as earnings management (e.g., Hribar et al. 2006; Chan et al. 2010; Dittmar and Field 2015). We thus expect managers will use information about their investment opportunities and cash availability to jointly determine their buyback guidance decision and repurchase policy.

H2: Buyback guidance is persistent and predicts persistent and elevated long-term repurchase activity.

We note that H1 and H2 go together, as we expect that buyback guidance and steady repurchases will be more attractive for mature firms, for whom the market discounts cash on the balance sheet because of agency costs of free cash flow (e.g., Faulkender and Wang 2006).

Our final prediction explores the potential direct costs of issuing buyback guidance and making a long-term commitment to repurchase shares: reduced ability to time the market. Prior studies document that firms repurchasing shares on average do so at below market prices (e.g., Ikenberry et al. 1996; Dittmar and Field 2015). However, profitably repurchasing shares requires irregular repurchases, so that firms do not repurchase shares when they are relatively expensive while repurchasing in larger quantities when they are inexpensive. By committing the firm to make persistent and elevated repurchases, guidance reduces managerial discretion to respond to changing valuations or market conditions. As a result, we expect firms that provide buyback guidance to make less profitable repurchases than firms that retain the discretion to time the market.

H3: Buyback guidance is associated with lower repurchase profitability, consistent with reduced timing flexibility.

If firms can resolve agency concerns of investors through guidance, both by guiding about these repurchases and endogenously adopting a steady repurchase policy, the valuation benefits are likely to far exceed the profits generated by managers repurchasing their own stock when it is undervalued. For example, our estimates in Table 9, Column 1, indicate that non-guiders, compared to guiders, pay 2.0% less relative to the value-weighted average price over the year. Combining these statistics with the average repurchase intensity (around 3.2% of the firms' market capitalization), the average valuation benefit from market timing for non-guiders, compared to guiders, is approximately 0.06% (= 2.0%*3.2%). If firms can credibly signal to investors that they are effective stewards of capital, they should be able to realize valuation gains from mitigating agency concerns that could substantially outweigh the benefits of opportunistically repurchasing shares at favorable prices (e.g., Faulkender and Wang 2006). Overall, we argue that mature firms will issue buyback guidance to credibly signal a long-term commitment to repurchasing shares.

2.3 SAMPLE SELECTION AND DESCRIPTIVES STATISTICS

2.3.1 Sample Selection

We construct a novel dataset of buyback guidance events using LSEG Guidance Reports (GR), as in Mayew et al. (2024). GR provides a detailed history of corporate guidance

as-originally-reported by firms and exhibits high data accuracy. Our initial sample includes 9,557 guidance observations for the GR item "net common shares issued/bought back," covering all S&P 1500 non-financial, non-utility firms from 2011 to 2020, as shown in Table 2.1, Panel A.[24] To identify buyback guidance, we use ChatGPT to classify each guidance based on the underlying textual disclosure.[25] Appendix 2.A, Panel A, presents the detailed ChatGPT prompts. Our classification consists of two steps. First, we ask ChatGPT to determine whether each statement represents a forward-looking repurchase disclosure. This step removes guidance related to share issuances or statements containing only information about authorized shares, as these do not provide clear information about future repurchases. Second, we identify whether the remaining guidance provides quantitative information, i.e., a dollar amount or number of shares expected to be repurchased. This classification procedure leads to a final sample of 4,653 buyback guidance events (issued on 3,955 unique firm-days), after excluding observations with other missing data.[26]

In addition to the quantitative buyback guidance that forms our main variable of interest, we also identify GR guidance instances where firms explicitly state they repurchase selectively when their shares are undervalued, but without providing quantitative guidance. This helps us directly capture firms that prioritize repurchase flexibility. We find 733 such "*Buyback Undervaluation Statement*" issued on 702 unique firm-days. Lastly, we hand-collect guidance instances explicitly stating that the firm is suspending repurchases or plans to repurchase zero shares ("suspension-related statements"), identifying 60 such cases. Appendix 2.A, Panel B presents examples of our buyback guidance classification and Appendix 2.A, Panel C, provides detailed information on the ChatGPT classification procedure and the validation process to demonstrate the steps taken to safeguard variable construction validity.

To perform our main empirical analyses, we construct a firm-year panel dataset covering 2011 to 2020 using firms included in the GR database, and we merge this with

[24] We define the sample period as 2011–2020 to exclude the years of the 2008 financial crisis and to ensure a clean ten-year window for analysis, while retaining 2020 to conduct the test presented in Table 4, Panel B.

[25] Given the large number of guidance events to classify, we use large language models to semi-automate this task, because manual coding is inherently labor-intensive and subjective. We utilized the GPT-4o model and Batch API. We set the temperature to neutral (i.e., 1) for all prompts. In Appendix A, Panel C, we provide detailed documentation of our classification procedure as well as the various validation processes to ensure the accuracy of ChatGPT classification. In short, we validate ChatGPT classification by comparing it with manual classifications. Across the various classification tasks underlying our variable construction, such as identifying buyback guidance and extracting quantitative information, ChatGPT generally achieves accuracy rates exceeding 95%. Additionally, we evaluated ChatGPT classification at different points in time to validate that its output underlying our variable construction is robust and consistent over time.

[26] The GR dataset captures more than one guidance instance issued on a single firm-day if the firm issues multiple pieces of forward-looking information in one day. For example, the firm can issue a quarterly guidance and an annual guidance on the same day.

financial statement information from COMPUSTAT and CRSP, as well as repurchase authorization data from SDC Platinum. Importantly, we limit the sample to firm-years with actual repurchases in the year, which ensures that all firms had the opportunity to provide guidance and allows for a consistent comparison of guiders and non-guiders. This results in an initial sample of 6,972 firm-years representing 1,095 unique S&P 1500 firms over the period. Using the 4,653 buyback guidance events, we construct an indicator variable, *Buyback Guidance*, which equals one if a firm issues at least one buyback guidance during the fiscal year, and zero otherwise.[27]

2.3.2 Descriptive Statistics

Table 2.1, Panel A, provides sample details, indicating the datasets and units of observation used in each analysis for clarity. Descriptive statistics are presented in Table 2.1, Panel B. We find that 22.89% of firm-years in our sample contain at least one buyback guidance issuance. This is considerably more frequent than other forms of repurchase-related disclosures studied in prior research; for example, only 7.20% of firm-years involve an ASR. This comparison underscores the prevalence of buyback guidance and highlights its potential importance as a distinct and understudied repurchase-related voluntary disclosure. We find 4.5% of firms make a *Buyback Undervaluation Statement*, suggesting that they repurchase selectively when their shares are undervalued. In addition to our main variables of interest, we also report summary statistics for the remaining variables used in the analysis, which are defined later in the text.

Additionally, buyback guidance appears to be predominantly manager-initiated. GR collects guidance from a comprehensive set of corporate disclosures, including press releases and conference calls. Untabulated analysis shows that buyback guidance appears in the Q&A of conference calls less than 13 percent of the time. Anecdotal review suggests these cases are often follow-ups to explicit guidance provided in earlier manager-initiated disclosures.

2.4 DETERMINANTS OF BUYBACK GUIDANCE

We begin by analyzing the firm-level determinants of buyback guidance to assess how guiders differ from non-guiders. A key objective is to test whether guiders are mature firms

[27] The propensity to issue buyback guidance exhibits limited time-series variation over our sample period. We find a decline in guidance activity during the onset of the COVID-19 crisis, along with a decline in repurchases. While overall repurchase intensity increases after the 2017 Tax Cuts and Jobs Act (TCJA), consistent with Albuquerque et al. (2024), we do not observe a corresponding significant increase in the frequency of buyback guidance, perhaps consistent with the repurchases induced by TCJA constituting less of a commitment.

facing agency concerns. As discussed in our conceptual framework, repurchases are accretive when the earnings yield exceeds the prevailing interest rate, making them an attractive payout option that boosts reported performance (Hribar et al. 2006; Ben-David and Chinco 2023). Accordingly, we expect buyback guidance to be more common among firms with ample cash, no reliance on external financing, and accretive repurchase opportunities.

To test this, we regress $Buyback\ Guidance_y$, an indicator equal to one if the firm issues buyback guidance in year *y* and zero otherwise, on firm characteristics. To proxy for maturity and agency concerns, we include: (i) an indicator for firm maturity (*Mature Firm*), defined as having positive operating but negative investing and financing cash flows (Dickinson 2011); (ii) an indicator for whether the firm initiated an equity issuance in the past year (*Equity Issuance*)[28]; and (iii) total cash holdings (*Cash*). To proxy for the firm-level economic conditions under which repurchases are accretive, we include the earnings yield spread (*E/P - Risk Free Rate)* in both levels and first differences.[29] Higher values imply that repurchasing shares improves EPS.

We control for a comprehensive set of firm fundamentals. To capture dilution effects, we include *Dilution*, defined as the inverse ratio of common shares outstanding to fully diluted shares outstanding. We also control for firm size (*ln(Market Value)*), market-to-book ratio (*ln(Market-to-Book*)), capital expenditures (*CAPEX*), and a dividend payer indicator (*Dividend*). To account for repurchase conditions, we include *Repurchase Intensity*, the dollar value of shares repurchased during the fiscal year scaled by the market value of equity, and indicators for whether the firm announced a repurchase authorization (*Authorization*) or an accelerated share repurchase (*ASR*) during the year. We include year fixed effects and industry fixed effects, and cluster standard errors at the firm level.[30]

We report results in Table 2.2. Column (1) shows that mature firms with higher cash and no equity issuance are more likely to issue buyback guidance, consistent with H1. Contrary to the view that guidance primarily helps investors adjust for dilution from employee stock plans (e.g., Bens et al. 2003), we find *Dilution* is not significantly associated with guidance. Column (2) confirms that firms with higher and increasing earnings yield spreads are more likely to issue buyback guidance, supporting the idea that firms are more likely to guide when

[28] See McKeon (2015) and Farre-Mensa et al. (2024).
[29] Given that we are only interested in cases where repurchases are accretive, we set *E/P – Risk-Free Rate* equal to zero when this measure is negative.
[30] Year fixed effects are based on calendar years. Industry fixed effects are based on the three-digit SIC codes.

the repurchases will increase EPS.[31] Column (3) adds industry fixed effects, and results remain qualitatively unchanged. Column (4) shows that guidance issuance is more likely among firms with high repurchase intensity, repurchase authorizations, and ASRs (i.e., those already active in returning capital to shareholders). Importantly, our main results remain robust to the inclusion of these controls. Overall, the evidence suggest that guiders are systematically different from non-guiders: they are mature, cash-rich firms with accretive repurchase opportunities.

2.5 MARKET VALUATION OF BUYBACK GUIDANCE

We hypothesize that managers issue buyback guidance when repurchases increase valuation (i.e., they are good news to the market) and that guidance accelerates the incorporation of this benefit into the stock price. Accordingly, we expect positive investor reactions to guidance announcements (Section 5.1), stronger responses to repurchase increases for guiders than non-guiders (Section 5.2), and more negative market reactions to the suspension of repurchases for guiders than for non-guiders (Section 5.3).

2.5.1 Market Reactions to Buyback Guidance

We test investor market reactions to buyback guidance in two steps: first, by examining abnormal returns around unique firm-day guidance events; and second, by evaluating its incremental information content in two separate settings in which firms commonly announce guidance: repurchase authorizations and earnings announcements.

If guidance conveys positive information about a firm value, we expect positive abnormal stock returns around its announcement. We measure the cumulative abnormal return (CAR) over the five-trading-day window centered on the buyback guidance announcement. As shown in Table 2.3, Panel A, Column (1), the average CAR around guidance announcements is 0.3% and statistically significant.

Most guidance events in our sample consist of an annual forecast followed by updates. If guidance is informative primarily at the point of commitment, we expect stronger market reactions to the first guidance issued each fiscal year. We therefore split the sample into initial vs. subsequent guidance events. Initial guidance events yield a significantly larger average return (0.5%) than subsequent updates, which show a positive but insignificant average return. The difference between the two CARs is statistically significant.

[31] Anecdotally, reading through guidance instances, we observe firms often explicitly link repurchase behavior to their effect on EPS (e.g., repurchases will lift EPS by three cents this year).

To better understand the market reaction to buyback guidance, we focus on two types of events where firms often issue such guidance: earnings announcements and repurchase authorizations. In both settings, some firms include buyback guidance while others do not, allowing us to directly compare market reactions between events with and without guidance.[32] In these regressions, we control for both the average effect of the news as well as any reaction expected based on concurrent earnings news or earnings guidance, isolating the incremental effect of buyback guidance. Specifically, we estimate the following empirical model:[33]

$$CAR_{auth/ea} = \beta_1 Buyback\ Guidance + \beta_2 Positive\ EA\ Surprise +$$
$$\beta_3\ Negative\ EA\ Surprise\ + \beta_4\ Quarterly\ EPS\ Forecast\ Surprise +$$
$$\beta_5\ Annual\ EPS\ Forecast\ Surprise + \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (2.1)$$

The dependent variable, $CAR_{auth/ea}$, is the cumulative abnormal return over the [-2, +2] window around either a repurchase authorization or earnings announcement (day 0). Our variable of interest is *Buyback Guidance*, and β_1 captures the incremental cumulative abnormal return when events are bundled with guidance. If guidance provides additional information to investors, we expect β_1 to be positive.

Table 2.3, Panel B reports results from estimating Equation (2.1). Columns (1) and (2) report results for our sample of authorizations. The incremental abnormal return of buyback guidance is 0.7-0.8%, even after controlling for firm characteristics in column (2). This pattern is consistent with guidance clarifying the firm's intentions under open-ended authorizations. Columns (3) and (4) report results for our sample of earnings announcements. We find that the *Buyback Guidance* coefficient is positive and significant (0.4% and 0.5%, respectively), with and without controls. Overall, these findings suggest that buyback guidance conveys positive and economically meaningful information, enhancing the informativeness of both repurchase authorizations and earnings announcements.

2.5.2 Buyback Guidance and Market Valuation of Repurchases

Building on our short-window evidence of positive market reactions to buyback guidance announcements, we examine whether investors value repurchases by guiders more positively over longer horizons than those made by non-guiders. Specifically, we test whether

[32] Around 70% of buyback guidance issuances are bundled with earnings announcements (EAs) in our sample. This is consistent with prior literature showing that managers generally combine their guidance practices with earnings announcements (Call et al. 2024).

[33] ΣFE includes year fixed effects *and* industry fixed effects. We cluster standard errors at the firm level throughout our analyses.

changes in repurchases are more positively associated with contemporaneous annual returns for guiders than non-guiders by estimating:

$$12month\ Returns = \alpha + \beta_1\ Buyback\ Guidance + \beta_2\ \Delta Repurchases + \beta_3\ Buyback\ Guidance * \Delta Repurchases + \Sigma\text{Controls} + \Sigma\text{FE} + + \varepsilon \quad (2.2)$$

where $12month\ Returns$ are measured over the 12 months preceding the fiscal year earnings announcement. $\Delta Repurchases$ is the change in repurchase value scaled by beginning-of-year market capitalization, and β_3 captures whether repurchases by guiders have a stronger valuation effect and is our variable of interest. We control for other performance or payout metrics linked to market valuation, such as current-year changes in earnings and dividends, and prior-year repurchase, earnings, and dividend yields, along with their interactions with $Buyback\ Guidance$.

Table 2.4, Panel A reports the results. Column (1) shows a positive and significant β_3, supporting that guiders' repurchases carry higher valuation. One potential concern is that the observed valuation effect may may be driven by correlated earnings guidance rather than the repurchase guidance. To address this concern, Column (2) includes earnings guidance and fully interacts with repurchases, earnings, and dividends to control for concurrent news that could be inferred from earnings guidance. The coefficient of interest, β_3, remains positive and statistically significant. The economic magnitude of β_3 implies that a 1% increase in repurchases over market value is associated with a 1.86% higher return for guiders relative to non-guiders.

In Table 2.2, we find firm size is a strong predictor of guidance issuance. To ensure that our significant coefficient does not simply arise because of a firm size effect, in column (3), we control for firm size and its interactions with repurchases, dividends, and earnings. The coefficient on β_3 remains positive and statistically significant (1.021), confirming that the result is not driven by a simple size effect. We note that we do not control for agency cost proxies (e.g., cash, accretion, maturity), as these characteristics are likely endogenous to both the decision to issue buyback guidance and how markets value it, whereas size is correlated with guidance but not necessarily an agency cost proxy.

Overall, the results in Table 2.4, Panel A show that guiders have a significantly larger slope coefficient in long-horizon return regressions compared to non-guiders. This indicates that the market responds more positively to repurchase activity by guiders, supporting H1 that repurchases are more highly valued when accompanied by buyback guidance. While guidance may cause repurchase expectations to be reflected in the stock price earlier, all firms are required

to disclose actual repurchases quarterly, and most guidance covers only the current fiscal year. As a result, investors have comparable information about realized repurchases for both guiders and non-guiders. The observed valuation difference is therefore more likely due to differences in how investors value repurchases.

2.5.3 Market Reaction to Buyback Suspension Statements

The results in the previous two sections suggest that markets respond positively to buyback guidance and view repurchases by guiders more favorably than those by non-guiders. A natural question, however, is what prevents high–agency-cost firms from issuing buyback guidance opportunistically to gain a short-term valuation boost without following through. We argue that such behavior is deterred by the transparency of actual repurchases in quarterly financial statements, making deviations easy to detect and exposing firms to reputational costs.

Consistent with this prediction, we find few instances in our sample of firms issuing statements in which managers announce their intention to suspend the buyback for a given period (*Buyback Suspension Statement*). Crucially, our limited sample includes suspension statements from both guiders and non-guiders, allowing us to compare the market's reaction to a temporary halt to repurchases. Table 2.4, Panel B reports descriptive evidence for the 60 buyback-suspension events that have corresponding return data. For this analysis, we classify guiders as firms that issued at least one buyback guidance in the prior fiscal year. The average market reaction to suspension events is negative for guiders (-1.8%) but positive for non-guiders (1.6%), with this difference being statistically significant.

Most buyback suspension announcements (around 70%) occurred in 2020, following the Covid-19 pandemic outbreak (e.g., Pettenuzzo et al., 2023). This exogenous shock increased uncertainty for all firms and provides a useful setting to compare market reactions between prior guiders and non-guiders under similar conditions. For a limited sample of 42 suspension events during 2020, we find that guiders experienced a significant negative market reaction (-3.3%), while non-guiders had a positive but statistically insignificant reaction (2.6%). The positive reaction for non-guiders, while not statistically significant, is consistent with the idea that non-guiding managers may not expect the market to respond unfavorably to the announcement. In contrast, guiders, having previously committed to buyback, might feel compelled to disclose suspensions, resulting in a stronger market penalty.[34] Despite the small

[34] In untabulated analysis, we find that, conditional on firms actively repurchasing ex ante and suspending repurchases ex post, guiders are more likely than non-guiders to announce buyback suspensions. This result aligns with traditional disclosure models, in which disclosure commits managers to reveal negative information in the future that they would have withheld but for the prior disclosure (e.g., Einhorn and Ziv 2008).

sample size, these findings support the view that buyback guidance serves as a credible commitment, with suspension announcements by guiders triggering more negative market reactions than those by non-guiders.

2.6 INFORMATION CONTENT OF BUYBACK GUIDANCE

Our valuation tests confirm that investors respond positively to buyback guidance and negatively to buyback suspension statements, consistent with H1. To better understand how buyback guidance mitigates agency costs, in this section, we analyze the information content of such guidance and how repurchase activity differs between guiders and non-guiders.

2.6.1 The information content of Buyback Guidance (relative to EPS Guidance)

In this section, we analyze a subset of buyback guidance issued alongside EPS guidance during firms' fourth-quarter earnings announcements to better understand the information content of buyback guidance. Applying this sample selection yields 255 observations in which firms provide forecasts for both the next year's buybacks and EPS in the same Q4 announcement (Table 2.5). This setting holds managerial information roughly constant across firms and allows for a direct comparison of the accuracy of buyback guidance relative to EPS guidance.

Comparing buyback guidance forecast errors to a random walk expectations model, we find that buyback guidance provides more accurate forecasts in 64.3% of cases. While we observe that EPS guidance similarly outperforms a random walk model, we find that EPS guidance offers an accuracy improvement over the random walk for 72.6% of firm-years, significantly greater than buyback guidance. This lower accuracy is surprising, given that managers retain full discretion over repurchases (i.e., cash is fungible), while customers and suppliers put real constraints on operating performance. The modest precision of buyback guidance would seem inconsistent with a model in which managers incur large deadweight costs to deliver the guided repurchases (e.g., Matsumoto 2002).

Additional analysis of forecast error signs shows strong evidence of "low-ball" guidance: managers meet or beat buyback guidance in 72% of cases, significantly exceeding the 62% meet-or-beat rate for EPS guidance. Comparing buyback guidance to prior-year forecasts reveals no consistent tendency to selectively forecast when the firm plans to increase buybacks: guiders repurchase more only 52.5% of the time, consistent with steady repurchasing behavior. This suggests that the high meet-or-beat rate stems from conservative guidance rather

than aggressive repurchasing. Supporting this, buyback guidance falls below prior-year repurchases in 63% of cases.

In contrast, EPS guidance patterns reflect growth expectations: firms meet or beat prior-year earnings 81.2% of the time and rarely (12.6%) guide below the previous year's EPS. Overall, these findings indicate that buyback guidance is a conservative estimate, with managers retaining flexibility to exceed forecasts.

2.6.2 Speed of Adjustments to Earnings Changes

Having shown that firms tend to issue conservative buyback guidance, we now examine whether they use the upward flexibility to increase repurchases as earnings rise. If so, this behavior would be consistent with using repurchases to mitigate free cash flow problems by returning excess cash as it is earned. To test this, we assess whether guiders adjust repurchases more quickly in response to profitability, estimating the following model:

$$\Delta\, Repurchases_y = \alpha + \beta_1\, Buyback\ Guidance_y + \beta_2 \left(\Delta \frac{E}{P} - \ Risk\ Free\right)_y + \beta_3\, Buyback\ Guidance_y * \left(\Delta \frac{E}{P} - \ Risk\ Free\right)_y + \Sigma Controls + \Sigma FE + \varepsilon \quad (2.3)$$

where $\left(\Delta \frac{E}{P} - \ Risk\ Free\right)_y$ captures changes in earnings that make repurchases more accretive, and β_3 measures the differential responsiveness of repurchases to these changes between guiders and non-guiders, with the latter presumably less focused on using repurchases to boost EPS. The model includes firm-level controls, year fixed effects, and industry fixed effects, and clusters standard errors at the firm level.

Results from estimating Equation (2.3) are reported in Table 2.6. In Columns (1) and (2), with and without controls, we find β_3 is positive and statistically significant, consistent with guiders adjusting repurchases with a higher speed to changes in earnings yield than non-guiders. If guidance serves as a floor on repurchase activity, the stronger responsiveness of repurchases to earnings changes should be driven primarily by increases in earnings. Consistent with this, Column (3) separates positive and negative changes in earnings yield and finds that the effect is asymmetric, significant only for positive changes. These results support the interpretation that guidance commits managers to a minimum level of repurchases, while allowing for upward flexibility as profitability improves and agency concerns intensify.[35]

[35] In untabulated analysis, we test the robustness of our results using alternative proxies for changes in profitability and find consistent results.

2.6.3 Buyback Guidance and Repurchase Policy

The prior analysis shows that guidance is not highly informative about the precise level of future repurchases, as firms often repurchase more than the guided amount, particularly when earnings increase. This raises the question: what information does guidance convey? We hypothesize that guidance signals a long-term commitment to a steady payout policy aimed at mitigating agency concerns, implying that short-term repurchase forecasts serve as a signal of sustained capital return behavior.

We structure this section in two parts to test H2. First, we examine the persistence of buyback guidance itself, which is necessary for sustaining the firm's long-term capital return commitment. Additionally, we compare the repurchase behavior of guiders and non-guiders, focusing on repurchase persistence and volatility to assess whether guiders follow a more stable payout policy. Second, we test whether short-term guidance predicts repurchase activity over the subsequent one to three years, investigating if guidance conveys long-term information about a firm's capital return strategy.

If firms use buyback guidance as a signaling mechanism, we expect such forecasts to be persistent, reflecting a commitment to continued disclosure. To test this, we estimate an autoregressive model in which current buyback guidance is regressed on its lagged value. Table 2.7, Panel A shows that lagged buyback guidance strongly predicts current guidance, with coefficients ranging from 0.36 to 0.41 (with statistical significance at the 1% level), even after including industry fixed effects, year fixed effects, and firm-level controls.

As a robustness test, we examine the persistence of undervaluation buyback statements, qualitative disclosures in which a manager states an intention to repurchase when the stock is undervalued. As described in Section 3.1 (Sample Selection), GR records 9,557 buyback-related disclosure events. Of these, 4,653 are classified as containing (quantitative) buyback guidance. For the remaining 4,904 events, we use ChatGPT to identify forward-looking statements in which firms indicate an intent to repurchase shares when they believe the stock is undervalued. We code these cases as "*Buyback Undervaluation Statement*". We find undervaluation statements in 4.5% of firm-years in our sample.[36] If these disclosures reflect a recurring strategy, they should exhibit persistence comparable to quantitative guidance. In Table 2.7, Panel A, Columns (3) and (4), we re-estimate the autoregressive models using this indicator and find significant autocorrelation, but with coefficients less than one-fourth the size of those for formal guidance. The difference is statistically significant (untabulated), supporting

[36] Please refer to Appendix A for ChatGPT prompt and validation details.

the notion that buyback guidance reflects a stronger and more deliberate disclosure commitment.

We next turn our attention to comparing the persistence and volatility of repurchases for guiders and non-guiders by estimating the following models:

$$Repurchase\ Intensity_{y+1} = \alpha + \beta_1 Buyback\ Guidance_y + \beta_2 Repurchase\ Intensity_y + \beta_3\ Buyback\ Guidance_y * Repurchase\ Intensity_y + \Sigma Controls + \Sigma FE + \varepsilon \quad (2.4A)$$

$$Repurchase\ Volatility_y = \alpha + \beta_1 Buyback\ Guidance_y + \beta_2 Repurchase\ Intensity_y + \Sigma Controls + \Sigma FE + \varepsilon \quad (2.4B)$$

where $Repurchase\ Intensity_{y+1}$ is the dollar value of shares repurchased during the fiscal year, scaled by the market value of equity at the beginning of the year and $Repurchase\ Volatility_y$, is the standard deviation of quarterly repurchases during the fiscal year.

Columns (1) and (2) of Table 2.7, Panel B estimate Equation (2.4A) to test whether repurchases persist beyond the guidance year. Since most guidance applies only to the current fiscal year, this specification assesses whether guidance signals a longer-term commitment. If managers routinely forecast unexpected amounts (e.g., Ajinkya and Gift 1984), we would expect lower persistence. To examine repurchase characteristics within firms that repurchase consistently, we restrict the sample to firm-years with repurchases exceeding 1% of market capitalization. The coefficient on β_3 captures the difference in repurchase persistence between guiders and non-guiders. Consistent with stronger long-term commitment, β_3 is positive and significant (0.119), indicating that guiders repurchase more persistently. Column (2) includes *Buyback Undervaluation Statement* and its interaction with *Repurchase Intensity*. We find the coefficient of interest remains robustly significant while the interaction between repurchases and *Buyback Undervaluation Statement* is not statistically significant.

Columns (3) and (4) of Table 2.7, Panel B estimate Equation (2.4B), which tests whether repurchase behavior is less volatile for guiders. If managers use guidance to demonstrate a steady commitment to capital return, we expect lower quarter-to-quarter repurchase volatility among guiders. Consistent with this, we find that repurchase volatility is significantly lower for guiders (Column 3). In contrast, the coefficient on *Buyback Undervaluation Statement* in Column (4) is not statistically significant, suggesting that generic statements about undervaluation do not convey the same commitment. These results reinforce

H2 by showing that guiders follow more stable repurchase policies, consistent with the interpretation of guidance as a credible long-term signal.

2.6.4 Buyback Guidance and Long-Term Repurchase Intensity

Lastly, we test whether buyback guidance, despite predominantly covering only the current fiscal year, contains information about a firm's long-term repurchase behavior. If buyback guidance serves as a credible signal regarding the long-term outlook for a sustained repurchase program, it should predict repurchases not only over the guidance period but also over future periods beyond that horizon. We assess this prediction of H2 by examining whether guiders go on to repurchase more in subsequent years, relative to non-guiders. We estimate the following regression at the firm-year level:

$$Repurchase\ Intensity_{y+k} = \alpha + \beta_1 Buyback\ Guidance_y + \Sigma Controls + \Sigma FE + \varepsilon \quad (2.5)$$

where $Repurchase\ Intensity_{y+k}$ is the dollar value of shares repurchased in year $y+k$, scaled by the market value of equity at the beginning of that year; and k denotes the number of years after the year of the guidance announcement. If H2 holds, the coefficient on $Buyback\ Guidance_y$ is expected to be positive.

Table 2.8 presents the results. Columns (1) – (4) present estimates of Equation (2.5) for years y, $y+1$, $y+2$, and $y+3$, respectively. Across all three columns, the coefficient on $Buyback\ Guidance_y$ is positive and significant, consistent with expectations. In terms of economic significance, guidance in the current year is associated with significantly higher repurchase activity of 1.5% in the current year, 1.0% in the next year, 0.5% in the second year, and 0.3% in the third year. These effects are economically meaningful and extend well beyond the period covered by the guidance itself, consistent with the notion that guidance reflects a broader repurchase strategy rather than a one-time disclosure event. Moreover, the coefficient on ASR is only statistically significant in the current and next year, suggesting that the short-term repurchase agreements do not convey the same long-term information as buyback guidance forecasts. Similarly, *Buyback Undervaluation Statement* only convey information about higher repurchases during the current year.

2.7 COST OF BUYBACK GUIDANCE: REPURCHASE PROFITABILITY

As outlined in our conceptual framework, trading profitably requires buying and selling at the right time, and firms that have a persistent policy of acquiring their own shares may not be able to exercise these market timing opportunities. H3 predicts that this tradeoff will

manifest in lower repurchase profitability among guiders, as these firms prioritize a persistent repurchase policy, while non-guiders have more discretion to time the market.

We empirically test this prediction by examining whether firms that issue buyback guidance pay higher prices for their shares relative to average market prices by estimating the following firm-year level regression:

$$Share\ Repurchase\ Price\ Improvement_y = \alpha + \beta_1\ Buyback\ Guidance_y + \Sigma Controls + \Sigma FE + \varepsilon \quad (2.6)$$

where the dependent variable, $Share\ Repurchase\ Price\ Improvement_y$, is the difference between a firm's annual value-weighted average price and the average repurchase price, scaled by the repurchase price. Our independent variable of interest is $Buyback\ Guidance_y$, which equals one if the firm issues buyback guidance during the year, and zero otherwise. If H3 holds, we expect a negative coefficient on $Buyback\ Guidance_y$. That is, guiders pay more relative to market prices for repurchases and, hence, experience lower repurchase profitability due to reduced timing flexibility.

In Table 2.9, we present the results of Equation (6) in Columns (1) and (2). In Column (1), we report that, on average, guiders pay 2% more for their repurchased shares than non-guiders. In Column (2), we include a series of controls and obtain a coefficient on $Buyback\ Guidance_y$ indicating that guiders pay on average 1.5% more for their repurchased shares than non-guiders.

In Columns (3) and (4), we extend this analysis to a three-year horizon to investigate the long-term impact. We divide the sample into three non-overlapping three-year cohorts (2011–2013, 2014–2016, 2017–2019) and calculate average repurchase profitability by firm across each cohort. To be included in this firm-three-year sample, firms must have repurchased shares in at least one year and have GR coverage in all three years. We then test whether repurchase profitability varies with buyback guidance issuance over the three-year period, which provides a longer time interval over which firms can repurchase opportunistically. In Columns (3) and (4), the coefficient on $Buyback\ Guidance_y$ is significant, consistent with H3, suggesting buyback guiders pay 3% - 5% more for their repurchased shares than non-guiders over the three-year horizon.

We also examine the effect of an *ASR* on repurchase profitability. We find that, in contrast to the significantly negative coefficient on *Buyback Guidance*, *ASR* has a positive but insignificant coefficient. The lack of a significant coefficient on *ASR* is consistent with recent research suggesting firms use ASRs strategically to accumulate shares faster and effectively

market time (e.g., Chemmanur et al. 2022). Collectively, the results in Table 9 suggest that non-guiders pay less for repurchased shares, helping to explain why some firms avoid guiding.[37]

2.8 CONCLUSION

This study introduces buyback guidance as a voluntary forward-looking disclosure that firms use to credibly communicate long-term repurchase intentions. We show that firms issuing such guidance differ meaningfully from non-guiders: guiders are more mature, have higher agency frictions, and tend to make repurchases that are accretive to earnings. These firms also experience stronger and more favorable market reactions to both guidance announcements and actual repurchases. Our analysis suggests that buyback guidance functions as a commitment mechanism to a steadier stream of repurchases than that of non-guiders (but less steady than dividends), allowing guiders to anchor investor expectations without eliminating all flexibility in repurchases. In doing so, guidance helps mitigate the agency costs of free cash flow by signaling that excess capital will be returned to shareholders through sustained repurchases.

Importantly, we demonstrate that this commitment is both credible and costly. Guiders repurchase more persistently, exhibit lower volatility in buyback activity, and adjust payouts more strongly to rising profits, all consistent with a disciplined capital return policy. At the same time, they sacrifice the ability to opportunistically time the market, paying higher prices on average for repurchased shares than non-guiders. In contrast, firms that frame buybacks as contingent on undervaluation do not exhibit the same persistence or profitability, suggesting that such language lacks the credibility of explicit quantitative guidance. These findings reinforce the interpretation that buyback guidance is more than cheap talk, as it reflects a disclosure choice aligned with long-term payout priorities.

While our findings point to a meaningful role for buyback guidance in communicating long-term payout priorities, we are cautious that our analysis does not establish a causal link between guidance and ex-post repurchase behavior. For instance, we cannot disentangle whether the higher prices paid by guiders are a result of issuing guidance or whether firms with fewer market timing opportunities are more likely to guide in the first place. Nonetheless, both interpretations support our overarching framework: guiders and non-guiders pursue distinct

[37] Bratten (2025) finds that the SEC's monthly repurchase disclosure requirement reduced managers' use of share repurchases to inflate earnings per share, consistent with greater transparency limiting earnings management. In untabulated analysis, we find no evidence that the issuance of buyback guidance affects the extent of earnings management.

value-maximizing strategies. Guiders use disclosure to communicate a shift toward a sustained, accretive repurchase policy, while non-guiders prioritize flexibility to time repurchases in response to market conditions. By revealing underlying repurchase motives, guidance helps resolve longstanding tensions between opportunism and commitment in corporate payout strategy.

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2.10 APPENDIXES

Appendix 2.A: Classification of Buyback Guidance

Panel A: Buyback Guidance Classification Prompts with ChatGPT

Question on	Prompt
Forward-Looking Buyback Information or Not	Identify whether the following textual statement made on the specified date contains information about a stock repurchase that is planned to be executed. If yes, extract the part of the sentence related to future repurchases.\n Criteria: 1. Exclude statements that only discuss the authorization of a repurchase. 2. Exclude statements that only announce the repurchase program. 3. Exclude statements that discuss general capital return programs or combined capital return plans without specifically mentioning repurchases or buybacks. 4. Include statements that detail specific plans or actions for stock repurchases to be executed in the current or future years.\n Rules: Answer using JSON in the following format: {{\"id\": <id>, \"future_repur\" : 0 or 1, \"text\" : <relevant text>}}\n
Quantitative Buyback Guidance or Not (e.g., Buyback Share Number, Buyback Share Value, Buyback Horizon)	Identify whether the following textual statement made on the specific date contains either a quantitative estimation of the dollar value of shares to be repurchased in the future, or a quantitative estimation of the number of shares to be repurchased in the future. If yes, identify the estimated value of shares or the estimated number of shares to be repurchased, identify if the estimated value or share number is a point estimation, and identify the estimated completion date and the horizon of repurchase.\n Criteria: 1. Exclude the repurchase value or repurchase shares number that is only authorized or announced, but not expected to be completely repurchased. 2. Exclude the dollar value related to both repurchase and other capital return plans, such as dividends. 3. Exclude the repurchase value or repurchase shares number that has been executed. 4. If the statement provides both the estimated repurchase value (share number) for the full current year and the repurchase value (share number) that has been executed year-to-date, calculate the value (share number) to be executed in the rest of the year. If the repurchase value (share number) that has been executed year-to-date is not stated, always include the full-year estimation. 5. Include the estimated dollar value of shares or the estimated number of shares that is expected to be repurchased in the rest of the current or the future years. 6. Idenfify if the repurchase value (share number) to be excuted is a point estimation. 7. Exclude the date when previous repurchases have been completed. 8. Include the date when the expected repurchase will be completed. 9. Identify the horizon of executing the repurchase value (shares number) previously included as one of the following cases: more than one year (code as 2), one full-year (code as 1), or in the rest of the current year (code as 0). 10. In the horizon coding, also follow these rules. If the repurchase value (share number) to be executed in the rest of the year can be calculated according to Crieteria 4, code the horizon as in the rest of the current year. If the full-year repurchase value (share number) is identified and the repurchase value (share number) that has been executed year-to-date is not stated, always code the horizon as one full-year. If the estimated completion date is beyond current fiscal year period and the horizon is not one full-year, code the horizon as more than one year. If the share value (share number) is stated as quarterly repurchase rate without providing the horizon it applies to, code the horizon as more than one year. If the share value (share number) is stated as annual repurchase rate, code the horizon as one full-year.11. Provide \"NA\" to estimated repurchase shares number, repurchase share value, point estimation, repurchase completion date, or horizon if it cannot be identified.\n Rules: Answer using JSON in the following format: {{\"id\": <id>,\"repur_number\" : <0 or 1>, \"number\" : <estimated repurchase shares number>, \"repur_value\" : <0 or 1>, \"value\" : <estimated repurchase shares value in $>, \"point_est\": <0 or 1 or NA>, \"date\": <estimated repurchase completion date in Year-Quater format, eg. 2016-Q1>, \"horizon\": <2 or 1 or 0 or NA>}}\n

Appendix 2.A (Continued)

Panel A: Buyback Guidance Classification Prompts with ChatGPT (Continued)

Question on	Prompt
Buyback Undervaluation Statement	Given the following text, classify whether it explicitly mentions or clearly implies each of the following three buyback-related categories. A category should be marked 1 (yes) only if the keyword or phrase (e.g., “opportunistic”, “undervalued”, “dip”) is directly referring to a stock buyback or repurchase. This means that the term “buyback” or “repurchase” must appear in close proximity to the keyword or phrase. Additionally, if the keyword (e.g., “opportunistic”, “undervalued”, or “dip”) appears closer to phrases related to acquisitions, mergers, or M&A activity than to buybacks or repurchases, then it should not be counted as referring to buyback guidance. Do not infer a buyback intent unless it is clearly stated or unambiguously implied in relation to the company's own stock. If the reference is ambiguous or indirect, return 0 (no) for that category. Categories: 1. The text discusses opportunistic buybacks (i.e., the word “opportunistic” is clearly tied to a buyback or repurchase). 2. The text discusses buybacks when the stock is undervalued. 3. The text discusses buybacks when the stock price dips. Statement: {text} Respond in this JSON format (return 1 for each category that applies, else 0): {{ "UniqGuidInstanceID": "{uid}", "opportunistic_repurchase": 0 or 1, "undervalued_repurchase": 0 or 1, "price_dip_repurchase": 0 or 1 }}

Appendix 2.A (Continued)

Panel B: Buyback Guidance Classification Examples

Guidance Type	*GR Information*			*ChatGPT Classification*						*Manual Collection*
				Step 1: Buyback Guidance	*Step 2: Within Buyback Guidance - Quantitative Guidance*				*Step 3: Undervaluation*	*Suspension*
	COMPANY NAME	**GUIDANCE ISSUANCE DATE**	**GUIDANCE TEXT**	**Do they talk about future possible repurchases?**	**Do they give a number of shares to repurchase?**	**If yes, how many shares?**	**Do they give a dollar value to repurchase?**	**If yes, what is the dollar value?**	**Does it mention undervaluation?**	**Does it mention buyback suspension?**
Buyback Guidance	HOME DEPOT INC	28/06/11	"For the entire year of 2011 we're targeting about $3.5 billion of share repurchases."	Yes	No	N/A	Yes	3,500,000,000	No	No
	ALBEMARLE CORP	20/03/13	"And we announced our intention to repurchase 10% of our shares outstanding by the first quarter of 2014."	Yes	Yes	10% of shares outstanding	No	N/A	No	No
Buyback Undervaluation Statement	LYONDELL-BASELL INDUSTRIES	01/02/19	Opportunistic share repurchase will continue to be a component of our capital deployment.	Yes	No	N/A	No	N/A	Yes	No
Buyback Suspension Statement	DELUXE CORP	07/05/20	We plan to pause additional stock repurchases in the second quarter.	Yes	No	N/A	No	N/A	No	Yes
Not Buyback Statement	VERA BRADLEY INC	12/12/18	"Subsequent to quarter end, we completed our $50 million share repurchase plan.", "And during our most recent board meeting, the board authorized a new $50 million authorization that expires in December 2020."	No	NA	NA	NA	NA	NA	NA

Appendix 2.A (Continued)

Panel C: ChatGPT Classification - Detailed Procedure and Validation Process

To ensure accuracy when using ChatGPT to classify instances of buyback guidance, we conducted a series of validity checks throughout the process. All classifications were conducted using the GPT-4o model with a neutral temperature setting (i.e., temperature = 1). Below, we document the full procedure, including data collection, classification, and validation steps.

Our approach involved multiple rounds of classification and validation, organized into three main stages:

(1) During Spring 2024, human research assistants manually classified the full dataset. This manual process was labor-intensive and time-consuming, which motivated our transition to using ChatGPT for classification tasks. Nevertheless, the hand-coded classification provided a valuable benchmark for validating ChatGPT's classifications.
(2) During Summer 2024, we developed two ChatGPT prompts, prompt 1 ("Forward-Looking Buyback Information or Not") and prompt 2 ("Buyback Guidance or Not," e.g., Buyback Share Number, Buyback Share Value), as detailed in Appendix A, Panel A. We manually validated a subset of classifications from both prompts before constructing variables for analysis. Specifically, the output from prompt 1 was used to filter out GR data points that were not forward-looking (Table 1, Panel A), serving as the initial screening step for our main variable of interest, *Buyback Guidance*, and to guide further application of prompt 2. The combined outputs from prompt 2 regarding "repurchase number" and "repurchase value" were subsequently used to create the *Buyback Guidance* variable. Additionally, the classification of "date" was employed to identify the subset of data analyzed for annual guidance accuracy in Table 5.
(3) During Summer 2025, we developed ChatGPT prompt 3 (Appendix A, Panel A). After manual validation, the output of prompt 3 was employed to compute the variable *Buyback Undervaluation Statement*, used in Tables 7-9.

Prompt 1: "*Forward-Looking Buyback Information or Not*"

To develop prompt 1, we iteratively refined the prompt based on insights from the initial hand-coded classifications by human research assistants. Once finalized, we applied the prompt to the full dataset and validated its performance by comparing ChatGPT outputs to the original human classifications. The inconsistency rate was 11.34%, indicating that ChatGPT matched human classifications in nearly 90% of cases, suggesting strong baseline accuracy.

To assess whether these discrepancies stemmed from limitations in ChatGPT or potential subjectivity in the human classifications, we conducted an independent review. A research assistant uninvolved in the initial coding manually reviewed 100 randomly selected events from the subset of inconsistent cases. The independent coder agreed with the ChatGPT classification in 62 cases and with the original human label in 38, implying an accuracy rate of approximately 95.7% (= 100% − 11.34% × 38%).

Because generative AI output can vary over time, we also evaluated the temporal stability of Prompt 1. In Summer 2025, roughly one year after the original classification, we randomly selected 500 guidance instances and re-applied Prompt 1 using the same model and parameters. We repeated this process twice. The consistency rates with the original output were 95.0% and 94.8%, respectively, further supporting the reliability and validity of our automated classification for use in empirical analysis.

Prompt 2: *"Quantitative Buyback Guidance or Not*"

Prompt 2 involved multiple sub-classifications to accommodate potential empirical analyses that might require different guidance features, although only a subset of these classifications is ultimately used in our

main analyses. Given the complexity of this prompt and the importance of accurate classification, we implemented a three-step validation process to ensure reliability.

First, we conducted ex-ante prompt engineering using a sample of 300 randomly selected guidance instances. A human research assistant manually classified all 300 instances. Of these, 200 were used as a training set for refining the prompt, while the remaining 100 served as a testing set for validation. After multiple iterations, we achieved high classification accuracy: for the key variables "repurchase number" and "repurchase value" (which are used to construct our main variable, *Buyback Guidance*), ChatGPT achieved accuracy rates of 98% and 97% in the training set, and 100% and 95% in the testing set, respectively.

Second, we performed ex-post validation by comparing ChatGPT's full-sample classifications for "repurchase number" and "repurchase value" against hand-coded outputs from Spring 2024. The inconsistency rate for "repurchase number" was only 3.77%, while "repurchase value" had a higher discrepancy rate of 15.89%. To investigate the latter, we asked an independent research assistant, unaffiliated with the original manual coding, to review 100 randomly selected cases from the inconsistent subset. The independent RA agreed with the ChatGPT classification in 74 of the 100 cases, implying an adjusted accuracy rate of 95.87% (= 100% − 15.89% × 26%), which aligns closely with the 95% accuracy observed in the initial testing set.

Third, we validated the classification task involving the assignment of forecast windows to buyback guidance instances (i.e., the "date" classification used in the small-sample guidance accuracy analysis in Table 5). To do so, the independent RA manually reviewed and classified 100 randomly selected guidance examples. In 95 of those cases, the RA's classifications agreed with ChatGPT's, resulting in an estimated accuracy rate of 95%.

To assess temporal robustness, we re-ran Prompt 2 in Summer 2025 on 500 randomly selected guidance instances using the same model and parameters. We repeated this procedure twice. For the "repurchase number" and "repurchase value" outputs used in constructing *Buyback Guidance*, consistency rates were 97.1% and 98.1%, respectively. For the "date" variable, consistency rates were 93.0% and 93.6%. Together, these results confirm the validity and stability of our ChatGPT-based classifications, particularly for our main variables of interest.

Prompt 3: "*Undervaluation Buyback Statement*"

During the prompt development stage, we manually reviewed 500 randomly selected guidance instances and refined the prompt over multiple iterations to ensure clarity and accuracy. Due to time constraints, our systematic validation efforts primarily focused on ex-post checks. Specifically, a human RA independently coded 100 randomly selected guidance instances, which we then compared to the classifications produced by ChatGPT. Given that the overall frequency of *Undervaluation Buyback Statements* is relatively low (4.5% as reported in Table 1, Panel B), we report false positive and false negative rates alongside overall accuracy to provide a more informative assessment. Among the 100 cases, ChatGPT correctly identified 11 true positives and 86 true negatives, with only 1 false negative and 2 false positives. This yields a true positive rate of 91.7% (11 / [11 + 1]) and a true negative rate of 97.7% (86 / [86 + 2]). These rates suggest that the prompt performs well in identifying the qualitative statements of interest despite their low base rate.

Appendix 2.B: Variable Definitions

Variable Name	*Variable Definition*	*Sources*
Buyback Guidance Variables		
Buyback Guidance	Indicator variable equal to one if the firm issues at least one buyback guidance instance during the fiscal year, and zero otherwise. Buyback guidance instances are forward-looking, quantitative repurchase forecasts identified from LSEG Guidance Reports (GR) using a two-step classification process with ChatGPT (see Appendix A).	LSEG Guidance Reports (GR)
Buyback Undervaluation Statement	Indicator variable equal to one if the firm issues at least one buyback guidance instance that includes statements on opportunistic buyback during the fiscal year and no quantitative guidance, and zero otherwise. Opportunistic buyback statements are buyback guidance that explicitly mentions or clearly implies future buybacks that are opportunistic, when the stock is undervalued, or when the stock price dips. They are identified from LSEG Guidance Reports (GR) using a classification process with ChatGPT (see Appendix A).	LSEG Guidance Reports (GR)
Outcome Variables and Variable of Interests		
E/P - Risk Free Rate	Earnings yield computed as income per share before extraordinary items, scaled by the firm's stock price at the beginning of the fiscal year, minus the risk-free rate at the beginning of the fiscal year. If the earnings yield is lower than the risk-free rate, this variable is set to zero. Following Ben-David and Chinco (2024), we define the risk-free rate as Moody's seasoned Aaa corporate-bond yield, available from the St. Louis Federal Reserve's website (https://fred.stlouisfed.org/series/AAA).	Compustat
ΔE/P - Risk Free Rate	The annual change (year-over-year difference) in the above-defined *E/P - Risk Free Rate*.	Compustat
Positive ΔE/P - Risk Free Rate	Variable equal to *ΔE/P - Risk Free Rate* if *ΔE/P - Risk Free Rate* higher than zero, and zero otherwise.	Compustat
Negative ΔE/P - Risk Free Rate	Variable equal to *ΔE/P - Risk Free Rate* if *ΔE/P - Risk Free Rate* lower than or equal to zero, and zero otherwise.	Compustat
Mature Firm	An indicator variable indicating whether the firm is in the mature stage of the life-cycle. Following Dickinson (2011), we set the variable equal to one if the firm has positive cash flows from operating activities, and negative cash flows from investing and financing activities, and zero otherwise.	Compustat
Equity Issuance	Indicator variable equal to one if the firm issued equity during the year, and zero otherwise. Following McKeon (2015) and Farre-Mensa et al. (2024), we use Compustat quarterly data on equity issues (Compustat data item sstky), we identify an equity issue as firm-initiated if the dollar value of equity raised during the quarter scaled by the firm's market value of equity (Compustat data items prccq × cshoq + pstkq) is equal to or greater than 0.025).	Compustat
Cash	Total cash holdings scaled by total assets at the beginning of the fiscal year.	Compustat
12month Returns	The cumulative abnormal return calculated over the 12-month period before the earnings announcement date of the fiscal year.	CRSP
ΔRepurchases	The difference between the total dollar amount spent on share repurchases during the current fiscal year and the previous fiscal year, scaled by the firm's market value of equity at the beginning of the current fiscal year. Specifically, the total dollar amount spent on share repurchases during a year is calculated by summing, across all four quarters, the product of the average share price paid and the number of shares repurchased each quarter.	Compustat
Repurchase Intensity	The total dollar amount spent on share repurchases during the fiscal year, scaled by the firm's market value of equity at the beginning of that fiscal year. Specifically, it is calculated by summing, across all four quarters, the product of the average share price paid and the number of shares repurchased each quarter, and then dividing this sum by the firm's market capitalization at the start of the fiscal year.	Compustat
Repurchase Volatility	The standard deviation of quarter-to-quarter in the above-defined *Repurchase Intensity*.	Compustat

Appendix 2.B (Continued)

Variable Name	*Variable Definition*	*Sources*
Outcome Variables and Variable of Interests (continued)		
CAR	The cumulative abnormal return calculated over a five-day event window [-2, +2] around the date of a buyback guidance/authorization/EA instance/buyback suspension. The event date (day 0) is the announcement date provided by the LSEG Guidance Reports (GR). We calculate CAR using the market-adjusted returns model, which subtracts the market return from the firm's stock return over the event window.	WRDS Event Study
Share Repurchase Price Improvement	The difference between the value-weighted average price (VWAP) and the firm's average repurchase price during the measurement period (either one year or three years), divided by the average repurchase price over the same period. VWAP is calculated by taking the average daily stock price, weighted by the daily trading volume, over the entire fiscal period.	Compustat and CRSP
Control Variables		
ln(Market Value)	The natural logarithm of market value of equity at the beginning of the fiscal year.	Compustat
ln(Market-to-Book)	The natural logarithm of the firm's market-to-book ratio at the beginning of the fiscal year.	Compustat
CAPEX	Capital expenditures incurred during the fiscal year, scaled by the firm's market value of equity at the beginning of the fiscal year.	Compustat
Dividend	Indicator variable equal to one if the firm pays ordinary dividends during the fiscal year, and zero otherwise.	Compustat
Dilution	The inverse ratio of common shares outstanding to fully diluted common shares outstanding: 1/ [Common Shares / Common Shares Fully Diluted]. Higher values indicate more pronounced dilution effects.	Compustat
Authorization	Indicator variable equal to one if the firm has at least one repurchase authorization during the fiscal year, and zero otherwise.	SDC Platinum
ASR	Indicator variable equal to one if the firm conducts at least one accelerated share repurchase (ASR) during the fiscal year, and zero otherwise. ASRs are identified by searching all 8-K SEC filings of firms in our sample for the terms "ASR" and "Accelerated Share Repurchase(s)."	SEC Filings
ΔEarnings	The difference between earnings per share of the current fiscal year and that of the previous fiscal year, split-adjusted and scaled by the firm's stock price at the beginning of the current fiscal year.	Compustat
Earnings Yield	Earnings per share of the previous fiscal year, scaled by the firm's stock price at the beginning of that year.	Compustat
ΔDividend	The difference between dividends per share of the current fiscal year and that of the previous fiscal year, split-adjusted and scaled by the firm's stock price at the beginning of the current fiscal year.	Compustat
Dividend Yield	Dividends per share of the previous fiscal year, scaled by the firm's stock price at the beginning of that year.	Compustat
Positve EA Surprise	The positive component of the earnings surprise associated with an earnings announcement. Earnings surprise is calculated as the firm's reported earnings per share (EPS) minus the consensus analyst forecast of EPS. This variable equals the earnings surprise if it is positive and zero otherwise.	I/B/E/S
Negative EA Surprise	The negative component of the earnings surprise associated with an earnings announcement. Earnings surprise is calculated as the firm's reported earnings per share (EPS) minus the consensus analyst forecast of EPS. This variable equals the absolute value of the earnings surprise if it is negative and zero otherwise.	I/B/E/S

Appendix 2.B (Continued)

Variable Name	*Variable Definition*	*Sources*
Control Variables (continued)		
Annual EPS Forecast Surprise	The guidance surprise of management annual EPS guidance issued on the earnings announcement day, scaled by the stock price at the beginning of the year. Guidance surprise is measured as the EPS guidance value minus the actual EPS of the year prior to the year that the guidance applies to. If a guidance is a point (range) forecast, then the guidance value is the point (average of the range) forecast.	I/B/E/S; Compustat
Quarterly EPS Forecast Surprise	The guidance surprise of management quarterly EPS guidance issued on the earnings announcement day, scaled by the stock price at the beginning of the year. Guidance surprise is measured as the EPS guidance value minus the actual EPS of the quarter prior to the quarter that the guidance applies to. If a guidance is a point (range) forecast, then the guidance value is the point (average of the range) forecast.	I/B/E/S; Compustat

2.11 TABLES

Table 2.1: Sample Selection and Descriptive Statistics

Panel A: Sample Selection

Buyback Forward-Looking Statements Sample (2011-2020)	
	Guidance Events
Guidance instances on Item "net common share issued/bought back"	9,557
Less: Instances that are not forward-looking (Appendix A Panel A - Step 1)	(1,504)
Less: Qualitative Buyback Statements (Appendix A Panel A - Step 2)	(2,906)
Less: Instances with missing information on control variables and/or returns	(494)
Buyback Guidance - Full Sample	4,653
Buyback Guidance - Unique Firm-Day Events	3,955

Firm-year Panel Datasets (2011-2020)		
	Firm – Year	Unique Firms
Repurchasing Firms Sample (with Positive Repurchases)	6,972	1,095
High-Intensity Repurchasing Firms (with Repurchases ≥1% of Market Value)	4,697	974

Buyback Guidance Event Study Datasets (2011-2020)		
	Events	Unique Firms
Repurchase Authorization Sample	2,701	733
Earnings Announcement Sample	20,249	870
Buyback Guidance Events with Repurchase and EPS Forecast	255	110
Buyback Suspension Announcements Events - Full Sample	60	47
Buyback Suspension Announcements Events - Calendar Year 2020	42	32

Table 2.1 (Continued)

Panel B: Summary Statistics

Variable	N	Mean	Standard Deviation	p25	p50	p75
Buyback Guidance Variables						
Buyback Guidance	6,972	0.2289	0.4202	0.0000	0.0000	0.0000
Buyback Under-valuation Statement	6,972	0.0450	0.2074	0.0000	0.0000	0.0000
Outcome Variables and Variable of Interests						
Mature Firm	6,972	0.6824	0.4656	0.0000	1.0000	1.0000
Equity Issuance	6,972	0.0367	0.1881	0.0000	0.0000	0.0000
Cash	6,972	0.1244	0.1251	0.0362	0.0859	0.1693
E/P - Risk Free	6,972	0.0232	0.0315	0.0000	0.0134	0.0327
ΔE/P - Risk Free	6,972	-0.0047	0.0766	-0.0196	-0.0011	0.0164
Repurchase Intensity	6,972	0.0320	0.0344	0.0058	0.0216	0.0458
Repurchase Volatility	6,972	0.0066	0.0081	0.0013	0.0039	0.0086
ΔRepurchases	6,972	0.0021	0.0372	-0.0097	0.0010	0.0153
12-months returns	6,863	0.1685	0.6272	-0.0722	0.1197	0.3193
$CAR_{byb\ guid}$	3,955	0.0030	0.0507	-0.0192	0.0028	0.0249
Share Repurchase Price Improvement Variables						
Share Repurchase Price Improvement $_{y}$	6,972	0.0291	0.1345	-0.0300	0.0111	0.0674
Share Repurchase Price Improvement $_{3y}$	2,210	0.0446	0.1963	-0.0437	0.0145	0.0947
Main Control Variables						
ln(Market Value)	6,972	8.3835	1.5796	7.2119	8.2388	9.4469
ln(Market-to-Book)	6,972	1.7387	1.5682	1.0233	1.3555	1.8017
CAPEX	6,972	0.0515	0.0774	0.0131	0.0257	0.0545
Dividend	6,972	0.6331	0.4820	0.0000	1.0000	1.0000
Dilution	6,972	1.0166	0.0228	1.0051	1.0109	1.0197
Authorization	6,972	0.3197	0.4664	0.0000	0.0000	1.0000
ASR	6,972	0.0720	0.2585	0.0000	0.0000	0.0000
Positve EA Surprise	3,955	0.0005	0.0011	0.0000	0.0000	0.0004
Negative EA Surprise	3,955	0.0001	0.0004	0.0000	0.0000	0.0000
Annual EPS Forecast	3,955	0.2764	0.4473	0.0000	0.0000	1.0000
Quarterly EPS Forecast	3,955	0.1171	0.3215	0.0000	0.0000	0.0000

Table 2.1 presents the sample construction process and descriptive statistics. Panel A presents the construction of the main sample used in the analysis. We exclude financial and utility firms and retain only firm-years covered by GR with available data on Compustat between fiscal years 2011 and 2020. Panel B presents descriptive statistics for the main variables used in our analyses. The variable *12month Returns* have fewer observations due to missing returns data on CRSP for the full fiscal year.

Table 2.2: Determinants of Buyback Guidance

Dependent Variable:	*Buyback Guidance* $_y$			
	(1)	(2)	(3)	(4)
Mature Firm $_{y-1}$	**0.049*** **	**0.046*** **	**0.044*** **	**0.036*** **
	(4.455)	**(4.236)**	**(4.280)**	**(3.464)**
Equity Issuance $_{y-1}$	**-0.065*** **	**-0.063*** **	**-0.047** **	**-0.055** **
	(-2.848)	**(-2.744)**	**(-1.995)**	**(-2.351)**
Cash $_{y-1}$	**0.139** **	**0.107***	**0.129** **	**0.129** **
	(2.447)	**(1.888)**	**(2.001)**	**(2.093)**
ΔE/P - Risk Free $_y$		**0.188*** **	**0.153*** **	**0.148*** **
		(3.760)	**(2.909)**	**(2.801)**
E/P - Risk Free $_{y-1}$		**0.665*** **	**0.456** **	**0.343***
		(3.174)	**(2.164)**	**(1.664)**
Dilution $_{y-1}$	-0.123	-0.212	-0.182	-0.235
	(-0.495)	(-0.830)	(-0.715)	(-0.919)
ln(Market Value) $_{y-1}$	0.078***	0.077***	0.072***	0.068***
	(13.296)	(13.152)	(11.610)	(11.162)
ln(Market-to-Book) $_{y-1}$	0.008	0.007	-0.000	-0.002
	(1.286)	(1.216)	(-0.060)	(-0.321)
CAPEX $_{y-1}$	-0.031	-0.070	0.047	0.077
	(-0.357)	(-0.814)	(0.403)	(0.697)
Dividend $_{y-1}$	0.012	0.010	-0.004	-0.005
	(0.776)	(0.657)	(-0.261)	(-0.316)
Repurchase Intensity $_{y-1}$				0.777***
				(4.231)
Authorization $_{y-1}$				0.053***
				(4.032)
ASR $_{y-1}$				0.101***
				(3.287)
Fixed Effects:				
Year	Y	Y	Y	Y
Industry	N	N	Y	Y
Observations	6,972	6,972	6,972	6,972
Adjusted R-squared	0.116	0.118	0.177	0.190

Table 2.2 examines the determinants of buyback guidance issuance. The sample includes firm-years covered by GR in the period from 2011 to 2020 with positive repurchases. All variables are defined in Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.3: The Information Content of Buyback Guidance

Panel A: Stand-Alone Buyback Guidance Announcements

Dependent Variable: CAR_{byb_guid}	*Unique Firm-Day Buyback Guidance Events*	*First Guidance in the Fiscal Year*	*Subsequent Guidance in the Fiscal Year*
	(1)	(2)	(3)
Constant	**0.003*** (3.415)**	**0.005*** (3.597)**	**0.001 (1.400)**
T-Test for differences in coefficients (p-value)		0.007	
Observations	3,955	1,574	2,381
Adjusted R-squared	0.000	0.000	0.000

Table 2.3 (Continued)

Panel B: Buyback Guidance bundled with Repurchase Authorizations and EAs

Dependent Variable:	*Authorization Sample*		*EA Sample*	
	CAR_{auth}		CAR_{ea}	
	(1)	(2)	(3)	(4)
Buyback Guidance $_{ea/auth}$	**0.007****	**0.008****	**0.004*****	**0.005*****
	(2.066)	**(2.237)**	**(2.646)**	**(3.363)**
Authorization $_{ea}$			0.010***	0.010***
			(2.596)	(2.639)
Positve EA Surprise $_{ea/auth}$	10.573***	10.271***	5.134***	5.043***
	(7.255)	(6.953)	(14.339)	(13.527)
Negative EA Surprise $_{ea/auth}$	-12.633***	-12.994***	-4.351***	-4.466***
	(-5.657)	(-5.835)	(-9.928)	(-9.887)
Annual EPS Forecast Surprise $_{ea/auth}$	0.160	0.144	0.768***	0.770***
	(0.606)	(0.531)	(6.357)	(6.342)
Quarterly EPS Forecast Surprise $_{ea/auth}$	0.374	0.394	0.476**	0.485**
	(0.561)	(0.594)	(2.053)	(2.092)
Percentage of Shares Authorized $_{auth}$	-0.003***	-0.003***		
	(-10.405)	(-11.021)		
Open Authorization $_{auth}$	-0.001	-0.000		
	(-0.204)	(-0.086)		
Prior Authorization Completion Rate $_{auth}$	-0.005	-0.006*		
	(-1.625)	(-1.808)		
First Authorization $_{auth}$	-0.009	-0.009		
	(-1.238)	(-1.273)		
Additional Control Variables	N	Y	N	Y
Fixed Effects				
Year-quarter	Y	Y	Y	Y
Industry (SIC3)	Y	Y	Y	Y
Observations	2,685	2,685	20,249	20,249
Adjusted R-squared	0.089	0.091	0.085	0.085

Table 2.3 examines how the market responds to buyback guidance using OLS regressions. Panel A Column (1) examines the average cumulative abnormal return (CAR) around all unique firm-day buyback guidance events from 2011–2020. Columns (2-3) split the buyback guidance events between the first one issued in the fiscal year (Column 2) and the subsequent ones (Column 3). The difference between the constant mean in Column (2) and Column (3) is statistically significant (p-value= 0.0123). Panel B examines the incremental information of buyback guidance when bundled with repurchase authorizations (Columns 1-2), and Earnings Announcements (Columns 3-4). Additional control variables include *Mature Firm*$_{\gamma-1}$, *ln(Market Value)*$_{\gamma-1}$, *ln(Market-to-Book)*$_{\gamma-1}$, *E/P - Risk Free*$_{\gamma-1}$, *Cash*$_{\gamma-1}$, *CAPEX*$_{\gamma-1}$, *Dividend*$_{\gamma-1}$, *Repurchase Intensity*$_{\gamma-1}$, *Authorization*$_{\gamma-1}$, *ASR*$_{\gamma-1}$, *Equity Issuance*$_{\gamma-1}$, *Dilution*$_{\gamma-1}$. All variables are defined in Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.4: Buyback Guidance and Market Valuation of Repurchases

Panel A: Association between changes in repurchases and contemporaneous stock returns

Dependent Variable:	*12-month Returns* $_y$		
	(1)	(2)	(3)
Buyback Guidance $_y$	-0.121***	-0.082**	-0.041
	(-2.86)	(-2.37)	(-1.28)
ΔRepurchases $_y$	-1.573	-2.669	-8.879
	(-1.54)	(-1.53)	(-1.27)
Buyback Guidance $_y$ **** ΔRepurchases*** $_y$	**2.110****	**1.861****	**1.021*****
	(2.06)	**(2.19)**	**(2.59)**
Repurchases Intensity $_{y-1}$	-0.535	-1.077	-0.887
	(-0.86)	(-1.09)	(-0.91)
Buyback Guidance $_y$ ** Repurchases Intensity* $_{y-1}$	1.079	0.935	0.712
	(1.62)	(1.58)	(1.28)
ΔEarnings $_y$	1.476***	1.283***	4.152
	(3.90)	(2.96)	(1.56)
Buyback Guidance $_y$ ** ΔEarnings* $_y$	-0.117	-0.283	0.107
	(-0.23)	(-0.53)	(0.27)
Earnings Yield $_{y-1}$	0.104	-0.275	-0.057
	(0.25)	(-0.52)	(-0.12)
Buyback Guidance $_y$ ** Earnings Yield* $_{y-1}$	0.400	0.027	-0.118
	(1.00)	(0.06)	(-0.29)
ΔDividend $_y$	0.404	-1.580	-2.539
	(0.24)	(-0.85)	(-0.32)
Buyback Guidance $_y$ ** ΔDividend* $_y$	1.132	0.910	0.708
	(0.60)	(0.47)	(0.43)
Dividend Yield $_{y-1}$	-1.152	-1.930**	-0.863
	(-1.16)	(-2.56)	(-1.13)
Buyback Guidance $_y$ ** Dividend Yield* $_{y-1}$	2.088**	1.907*	1.875*
	(2.04)	(1.66)	(1.80)
Controls			
Earnings Guidancey & interactions with *Unexpected Repurchases/Earnings/Dividendy* and *Repurchases/Earnings/Dividend Yieldy-1*	N	Y	Y
Sizey & interactions with *Unexpected Repurchases/Earnings/Dividendy*	N	N	Y
Fixed Effects			
Year	Y	Y	Y
Industry	Y	Y	Y
Observations	6,863	6,863	6,863
Adjusted R-squared	0.13	0.14	0.15

Table 2.4 (Continued)

Panel B: Market reaction to buyback suspension announcements

Full Sample				
Variable: CAR_{stop_byb}	N	Mean	p50	T-test (Mean !=0)
Guiders	24	-0.018	-0.024	0.128
Non Guiders	36	0.016	0.001	0.230
Difference in Means		-0.033		
t-test (p-value)		0.075		
Calendar Year 2020				
Variable: CAR_{stop_byb}	N	Mean	p50	T-test (Mean !=0)
Guiders	16	-0.033	-0.033	0.005
Non Guiders	26	0.026	0.011	0.131
Difference in Means		-0.059		
t-test (p-value)		0.013		

Table 2.4 examines the market valuation of repurchases, separately for buyback guiders and non-guiders in two settings. Panel A examines the association between annual changes in repurchases and contemporaneous annual stock returns. Column (1) reports the baseline results. Columns (2) includes EPS guidance interacted with $\Delta Repurchases_y$, $\Delta Earnings_y$, $\Delta Dividend_y$, $Repurchases\ Yield_{y-1}$, $Earnings\ Yield_{y-1}$, and $Dividend\ Yield_{y-1}$. Column (3) includes firm size interacted with $\Delta Repurchases_y$, $\Delta Earnings_y$, $\Delta Dividend$. Panel B provides descriptive statistics of market reactions to buyback suspension announcements for the full sample, as well as for calendar year 2020 only. All variables are defined in Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.5: Buyback Forecasts Accuracy

Buyback Absolute Forecast Error					
Variable	N	Mean	p50	% observations meet or beat	% more pessimistic than random walk
Buyback Guidance Forecast Error	255	0.015	0.008	72.16%	63.14%
Buyback Random Walk Forecast Error	255	0.022	0.014	52.55%	
Difference in Means		-0.007		19.61%	
t-test (p-value)		0.000		0.000	
% observations Buyback Guidance more accurate than Random Walk		64.31%			
EPS Absolute Forecast Error					
Variable	N	Mean	p50	% observations meet or beat	% more pessimistic than random walk
EPS Guidance Forecast Error	255	0.369	0.180	61.57%	12.55%
EPS Random Walk Forecast Error	255	0.588	0.380	81.18%	
Difference in Means		-0.219		-19.61%	
t-test (p-value)		0.000		0.000	
% observations EPS Guidance more accurate than Random Walk		72.55%			

Table 2.5 examines the accuracy and meet-or-beat percentage of buyback guidance and EPS guidance. The analysis utilizes a subsample of 255 annual buyback guidance instances that can be reliably matched to actual repurchase outcomes and for which corresponding contemporaneous annual EPS guidance is available. The benchmark model for expectation is a random walk. We measure guidance forecast accuracy with the absolute value of the forecast error. Buyback Guidance Forecast Error is the absolute value of the difference between the guided repurchase value and the actual annual repurchase value, scaled by the firm's market value at the beginning of the year. Buyback Random Walk Forecast Error is the absolute value of the difference between the actual repurchase value of the current year and that of the previous year. EPS Guidance Forecast Error is the absolute value of the difference between the guided EPS amount and the actual reported annual EPS, scaled by the stock price at the beginning of the year. EPS Random Walk Forecast Error is the absolute value of the difference between the actual reported annual EPS of the current year and that of the previous year. The subsample period is 2011 to 2020. Variable definitions are provided in Appendix B.

Table 2.6: Speed of Adjustments to Level and Changes in Earnings Yield

Dependent Variable:	*ΔRepurchases* $_y$		
	(1)	(2)	(3)
Buyback Guidance $_y$	0.017***	0.015***	0.013***
	(15.956)	(13.705)	(10.102)
ΔE/P - Risk Free $_y$	-0.063***	0.028	
	(-3.945)	(1.452)	
Buyback Guidance $_y$ **** ΔE/P - Risk Free*** $_y$	**0.067***	**0.068****	
	(1.898)	**(1.965)**	
ΔPositive E/P - Risk Freey			-0.007
			(-0.270)
Buyback Guidance $_y$ **** Positive Δ E/P - Risk Free*** $_y$			**0.173*****
			(2.891)
ΔNegative E/P - Risk Free $_y$			0.072**
			(2.212)
Buyback Guidance $_y$ **** Negative Δ E/P - Risk Free*** $_y$			**-0.027**
			(-0.576)
Repurchase Intensity $_{y-1}$	-0.616***	-0.660***	-0.660***
	(-36.909)	(-38.475)	(-38.424)
E/P - Risk Free $_{y-1}$		0.152***	0.164***
		(6.886)	(6.568)
Mature Firm $_{y-1}$		0.004***	0.004***
		(4.873)	(4.849)
Equity Issuance $_{y-1}$		0.001	0.001
		(0.615)	(0.541)
Cash $_{y-1}$		0.029***	0.029***
		(6.242)	(6.304)
Dilution $_{y-1}$		0.045**	0.045**
		(2.244)	(2.252)
ln(Market Value) $_{y-1}$		0.001***	0.001***
		(3.969)	(3.981)
ln(Market-to-Book) $_{y-1}$		-0.000	-0.000
		(-1.240)	(-1.303)
CAPEX $_{y-1}$		-0.018**	-0.018**
		(-2.196)	(-2.175)
Dividend $_{y-1}$		-0.005***	-0.005***
		(-5.012)	(-5.045)
Authorization $_{y-1}$		0.006***	0.006***
		(6.692)	(6.698)
ASR $_{y-1}$		0.003	0.003
		(1.369)	(1.377)
Year	Y	Y	Y
Industry	Y	Y	Y
Observations	6,972	6,972	6,972
Adjusted R-squared	0.328	0.379	0.381

Table 2.6 examines whether guiders adjust repurchases more than non-guiders in response to contemporaneous changes in the earnings yield minus the risk-free rate. Columns (1-2) examine the basic association between changes in earnings and repurchases, while Column (3) examines asymmetric associations between positive and negative earnings changes. The sample period is from 2011 to 2020. All

variables are defined in Appendix B. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.7: The Persistence of Buyback Guidance and Repurchase Behavior

Panel A: Persistence of Buyback Guidance

Dependent Variable:	*Buyback Guidance* $_y$		*Buyback Under-valuation Statement* $_y$	
	(1)	(2)	(3)	(4)
Buyback Guidance $_{y-1}$	**0.407*** **	**0.360*** **		
	(21.432)	**(18.526)**		
Buyback Under-valuation Statement $_{y-1}$			**0.063*** **	**0.059*** **
			(2.846)	**(2.656)**
E/P - Risk Free $_{y-1}$		0.054		0.259**
		(0.306)		(2.170)
Mature Firm $_{y-1}$		0.027**		0.008
		(2.504)		(1.299)
Equity Issuance $_{y-1}$		-0.056**		-0.006
		(-2.223)		(-0.407)
Cash $_{y-1}$		0.194***		-0.013
		(3.505)		(-0.582)
Dilution $_{y-1}$		-0.125		-0.054
		(-0.520)		(-0.383)
ln(Market Value) $_{y-1}$		0.045***		0.000
		(9.657)		(0.136)
ln(Market-to-Book) $_{y-1}$		0.002		0.001
		(0.377)		(0.260)
CAPEX $_{y-1}$		0.059		-0.167***
		(0.637)		(-3.352)
Dividend $_{y-1}$		-0.007		-0.010
		(-0.517)		(-1.260)
Repurchase Intensity $_{y-1}$		-0.090		0.323***
		(-0.509)		(2.620)
Authorization $_{y-1}$		0.037***		-0.001
		(3.007)		(-0.126)
ASR $_{y-1}$		0.048*		-0.020
		(1.773)		(-1.580)
Fixed Effects:				
Year	Y	Y	Y	Y
Industry	Y	Y	Y	Y
Observations	5,484	5,484	5,484	5,484
Adjusted R-squared	0.288	0.311	0.022	0.025

Table 2.7 (Continued)

Panel B: Persistence of Repurchase Behavior

Dependent Variable:	Persistency		Volatility	
	Repurchase Intensity $_{y+1}$		*Repurchase Volatility* $_{y}$	
	(1)	(2)	(3)	(4)
Buyback Guidance $_{y}$	***0.002***	***0.003***	***-0.001****	***-0.001****
	(1.219)	***(1.348)***	***(-2.924)***	***(-3.037)***
Repurchase Intensity $_{y}$	0.218***	0.214***	0.185***	0.185***
	(8.529)	(8.225)	(35.727)	(35.714)
Buyback Under-valuation Statement $_{y}$		-0.002		-0.000
		(-0.749)		(-1.245)
Buyback Guidance $_{y}$ **** Repurchase Intensity*** $_{y}$	***0.119****	***0.111****		
	(3.159)	***(3.102)***		
Buyback Under-valuation Statement $_{y}$ ** Repurchase Intensity* $_{y}$		0.031		
		(0.914)		
E/P - Risk Free $_{y-1}$	0.048**	0.048**	0.004	0.004
	(2.214)	(2.233)	(1.053)	(1.072)
Mature Firm $_{y-1}$	0.001	0.001	-0.000*	-0.000*
	(0.816)	(0.807)	(-1.749)	(-1.724)
Equity Issuance $_{y-1}$	-0.000	-0.000	0.000	0.000
	(-0.106)	(-0.100)	(0.504)	(0.517)
Cash $_{y-1}$	0.018***	0.018***	0.001	0.001
	(2.882)	(2.871)	(0.943)	(0.942)
Dilution $_{y-1}$	-0.032	-0.032	-0.001	-0.001
	(-1.343)	(-1.366)	(-0.106)	(-0.109)
ln(Market Value) $_{y-1}$	0.002***	0.002***	-0.001***	-0.001***
	(3.854)	(3.854)	(-7.839)	(-7.794)
ln(Market-to-Book) $_{y-1}$	0.001	0.000	-0.000	-0.000
	(1.240)	(1.234)	(-0.649)	(-0.651)
CAPEX $_{y-1}$	0.015	0.016	0.004*	0.004*
	(1.067)	(1.089)	(1.778)	(1.762)
Dividend $_{y-1}$	-0.004***	-0.004***	-0.000	-0.000
	(-3.207)	(-3.202)	(-1.118)	(-1.127)
Repurchase Intensity $_{y-1}$	0.074***	0.075***	-0.026***	-0.026***
	(3.943)	(3.954)	(-7.490)	(-7.482)
Authorization $_{y-1}$	-0.001	-0.001	-0.001***	-0.001***
	(-0.593)	(-0.590)	(-3.133)	(-3.123)
ASR $_{y-1}$	-0.000	-0.000	0.002***	0.002***
	(-0.085)	(-0.086)	(3.307)	(3.296)
Fixed Effects				
Year	Y	Y	Y	Y
Industry	Y	Y	Y	Y
Observations	4,697	4,697	4,697	4,697
Adjusted R-squared	0.208	0.208	0.540	0.540

Table 2.7 examines the persistence of buyback guidance and the persistence of repurchase behavior using the subsample of firms repurchasing at least one percent of shares outstanding in the prior year. Panel A examines whether firms that issue *Buyback Guidance* (Columns 1-2) and *Buyback Undervaluation Statement* (Columns 3-4) in a year are likely to make the same disclosure again in the subsequent year. Panel B examines whether guiders exhibit more persistent (Columns 1-2) and less volatile (Columns 3-4) repurchase behavior than non-guiders. The sample period is 2011 to 2020. All variables are defined in Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.8: Long-Term Information of Buyback Guidance

Dependent Variable	*Repurchase Intensity* $_{y}$ (1)	*Repurchase Intensity* $_{y+1}$ (2)	*Repurchase Intensity* $_{y+2}$ (3)	*Repurchase Intensity* $_{y+3}$ (4)
Buyback Guidance $_{y}$	***0.015******	***0.010******	***0.005******	***0.003******
	(13.459)	***(8.913)***	***(4.350)***	***(3.119)***
ASR $_{y}$	*0.017****	*0.005****	*0.001*	*0.002*
	(8.455)	*(2.633)*	*(0.665)*	*(1.176)*
Buyback Under-valuation Statement $_{y}$	*0.006****	*0.001*	*0.002*	*0.002*
	(2.928)	*(0.595)*	*(1.195)*	*(1.383)*
Repurchase Intensity $_{y}$		0.289***	0.158***	0.097***
		(16.550)	(8.915)	(5.828)
E/P - Risk Free $_{y-1}$	0.056***	0.052***	0.038**	0.054***
	(3.439)	(3.351)	(2.225)	(2.716)
Mature Firm $_{y-1}$	0.003***	0.001	0.002**	0.002**
	(3.261)	(1.604)	(2.276)	(2.561)
Equity Issuance $_{y-1}$	-0.002	-0.001	0.000	-0.000
	(-0.823)	(-0.577)	(0.025)	(-0.086)
Cash $_{y-1}$	0.019***	0.012***	0.011**	0.008
	(4.251)	(2.695)	(2.199)	(1.626)
Dilution $_{y-1}$	0.029	-0.013	-0.009	0.010
	(1.486)	(-0.701)	(-0.427)	(0.456)
ln(Market Value) $_{y-1}$	0.000	0.002***	0.003***	0.003***
	(0.947)	(4.903)	(7.151)	(6.764)
ln(Market-to-Book) $_{y-1}$	-0.001**	-0.000	-0.000	-0.000
	(-2.103)	(-0.062)	(-0.329)	(-0.635)
CAPEX $_{y-1}$	-0.018***	-0.004	0.003	0.008
	(-2.702)	(-0.471)	(0.300)	(0.823)
Dividend $_{y-1}$	-0.005***	-0.004***	-0.005***	-0.006***
	(-4.631)	(-4.074)	(-4.180)	(-4.577)
Repurchase Intensity $_{y-1}$	0.321***	0.087***	0.074***	0.081***
	(20.094)	(5.344)	(4.804)	(4.917)
Authorization $_{y-1}$	0.006***	-0.000	0.003***	0.001
	(7.406)	(-0.032)	(2.942)	(1.617)
Fixed Effects				
Year	Y	Y	Y	Y
Industry	Y	Y	Y	Y
Observations	6,972	6,972	6,967	6,910
Adjusted R-squared	0.328	0.268	0.183	0.165

Table 2.8 examines the association between buyback guidance and long-term repurchase intensity over the current, one-, two-, and three-year horizons for the full sample of positive-repurchases firm-years. All variables are defined in Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 2.9: Buyback Guidance and Repurchase Profitability

Dependent Variable:	*Share Repurchase Price Improvement*			
	Year		3-Year	
	(1)	(2)	(3)	(4)
Buyback Guidance $_{y/3y}$	**-0.020*** **	**-0.015*** **	**-0.059*** **	**-0.035*** **
	(-5.621)	**(-4.173)**	**(-4.971)**	**(-2.724)**
ASR $_{y/3y}$	*0.002*	*0.003*	*-0.025*	*-0.019*
	(0.265)	*(0.370)*	*(-0.704)*	*(-0.552)*
Buyback Under-valuation Statement $_{y/3y}$	*-0.004*	*-0.003*	*0.024*	*0.035*
	(-0.505)	*(-0.365)*	*(0.864)*	*(1.268)*
Repurchase Intensity $_{y}$	*-0.217*** *	*-0.185*** *	*-0.154*	*-0.015*
	(-3.924)	*(-3.097)*	*(-1.141)*	*(-0.096)*
E/P - Risk Free $_{y-1}$		0.129*		-0.169
		(1.913)		(-1.069)
Mature Firm $_{y-1}$		0.003		0.008
		(0.642)		(0.832)
Equity Issuance $_{y-1}$		0.003		0.027
		(0.320)		(1.075)
Cash $_{y-1}$		-0.012		-0.063
		(-0.680)		(-1.277)
Dilution $_{y-1}$		-0.007		-0.174
		(-0.073)		(-0.816)
ln(Market Value) $_{y-1}$		-0.004**		-0.013***
		(-2.346)		(-2.721)
ln(Market-to-Book) $_{y-1}$		-0.002		-0.003
		(-1.368)		(-0.858)
CAPEX $_{y-1}$		-0.111***		-0.171**
		(-2.849)		(-2.120)
Dividend $_{y-1}$		-0.016***		-0.013
		(-3.313)		(-1.138)
Repurchase Intensity $_{y-1}$		-0.201***		-0.331**
		(-3.655)		(-2.170)
Authorization $_{y-1}$		0.010***		0.001
		(2.697)		(0.149)
Fixed Effects				
Year	Y	Y	N	N
3-Year	N	N	Y	Y
Industry	Y	Y	Y	Y
Observations	6,976	6,976	2,210	2,210
Adjusted R-squared	0.037	0.046	0.051	0.063

Table 2.9 examines the association between buyback guidance variables and the price improvement of repurchases. In Columns (1)-(2), we compute repurchase price improvement over the fiscal year and use buyback guidance as our independent variable of interest. In columns (3)-(4), we compute repurchase price improvement over a three-year period and report *Buyback Guidance*, *ASR*, and *Buyback Undervaluation Statement* as the average value over those three fiscal years. The sample period is 2011 to 2020. All variables are defined in

Appendix B. t-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, *, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

CHAPTER 3: Payout Policy, Innovation Value, and Investors' Beliefs

with Tim Martens (Bocconi University)

3.1. INTRODUCTION

Does a firm's payout policy influence investors' beliefs about the value of its investments? While managers believe dividends and share repurchases convey valuable information about firm value (e.g., Brav et al. [2005]; Kaplan and Pérez-Cavazos [2022]), investors' use of payout information remains largely unclear. We argue that the uncertainty underlying the investment process and the commitment implied by the payout policy jointly affect investors' valuation of a firm's investment.[38] As investment uncertainty resolves positively, we expect managers to increase their commitment to payout (i.e., increasing dividends and decreasing share repurchases), conveying actionable information to investors about the expected value of current investments. To address this research question, we exploit the high uncertainty surrounding the timing and outcomes of the innovation process to examine how successful patent grants (i.e., the resolution of uncertainty) affect firms' payout choices and whether investors update their beliefs about the underlying innovation upon receiving payout information.

Firms' commitment to payout may affect investors' beliefs about innovation value through multiple channels. While innovative firms may be reluctant to pay out due to the unpredictable nature of their investment needs, committing to higher dividend payments could strengthen the credibility of payout policies as a signaling mechanism (e.g., Spence [1973]). Therefore, managers with positive NPV projects who commit to higher dividends can provide valuable information to investors.[39] Additionally, dividends can influence market valuation by reducing

[38] We use the expressions "uncertainty underlying the investment process" and "investment uncertainty" interchangeably. The "positive resolution of investment uncertainty" refers to information that increases the first moment and/or decreases the second moment of expected future cash flows.

[39] This signaling mechanism does not require disclosing proprietary information about the underlying innovation, which can benefit competitors. Additionally, it does not require managers to bear a deadweight cost to send the signal. Instead, managers who anticipate higher future cash flows from current investments can increase dividends to optimize cash flow management. This strategy is too costly to imitate for firms with worse

investors' mistrust (e.g., Caskey and Hanlon [2013]; Ellahie and Kaplan [2022]; Kapons et al. [2023]). This sets dividends apart from share repurchases, which are often perceived as being driven by managerial self-interest (e.g., Hribar et al. [2006]; Fried [2013]; Dittmar and Field [2015]). Finally, a stronger commitment to payout may not alter investors' beliefs about current innovation if it signals a decrease in future innovation opportunities (e.g., Grullon et al. [2002]; DeAngelo et al. [2006]). Overall, understanding how payout choices interact with the resolution of innovation uncertainty is relevant, as a suboptimal allocation of resources due to distorted managerial incentives may hinder long-term economic growth (e.g., Romer [1990]; Segerstrom [1991]; Howell [2017]; Kogan et al. [2017]).

We begin our analysis by examining whether innovative firms differ from non-innovative firms in their payout policies. Given that share repurchases involve less commitment than dividends and that innovative firms typically face more unpredictable investment needs, we expect innovative firms to favor share repurchases over dividends. Consistent with this hypothesis, we find that while innovative firms are as likely to pay out as non-innovative firms, they tend to prefer share repurchases over dividends. We further support this finding by analyzing repurchase and dividend intensity. Our evidence shows that, on average, innovative firms allocate 0.2% more of their total assets to share repurchases and 0.3% less to dividends compared to non-innovative firms.

In our second test, we build on our initial analysis to examine whether the realization of innovations, through successful patent grants, influences the decision to engage in share repurchases or pay dividends. Specifically, we argue that the positive resolution of investment uncertainty changes managers' approach towards the trade-off between commitment and flexibility. As expectations about future cash flows improve, the cost of committing to payout

investment outlooks, as they are unwilling to incur the expected future costs of decreasing dividends (Baker et al. [2016]).

decreases, while the value of signaling to the market increases. Our findings suggest that firms receiving valuable patents reduce their use of share repurchases and increase their use of dividends, consistent with the argument that managers commit to higher dividends once the uncertainty in the innovation process has been resolved.

In our third test, we examine whether dividend choices are tied to the profitability of current investments in innovation. Payout firms are usually mature, and such companies tend to specialize in exploitative innovation, which is likely to contribute to short-term profitability (e.g., March [1992]; March [2003]). If managers increase dividends when anticipating higher future cash flows from current investments in innovation, dividend choices should convey information about the profitability of the current innovation portfolio. Specifically, we expect the association between innovation and profitability to be stronger in dividend-paying firms that pay higher dividends. To test this hypothesis, we analyze different subsamples of innovative firms that pay out and find evidence supporting the moderating role of dividends in this relationship.

In our main test, we examine whether payout policy choices influence investors' assessments of innovation value. We leverage the quasi-random timing of patent grants, determined independently by the United States Patent and Trademark Office (USPTO), relative to dividend increases and share repurchase authorizations. Since patent grant announcements occur weekly in the USPTO's Official Gazette and their timing is beyond firms' control, this creates a plausibly exogenous variation in payout-related information available to investors. We find that patents granted after dividend increases are valued 6.9% higher than patents granted before dividend increases, whereas we detect no significant effect after share repurchases.[40] These results support the argument that investors interpret dividend increases as

[40] In untabulated analysis, the results remain robust to a difference-in-differences specification using no change in dividend declarations as a control group and are stronger for larger dividend increases.

credible signals of long-term firm prospects while viewing share repurchases as short-term-oriented actions.

Finally, we test whether dividends and share repurchases are differently associated with future investments in early-stage innovation. Life cycle explanations of payout policy suggest that the trade-off between retention and distribution evolves as earnings accumulate and investment opportunities decline (i.e., paying out becomes increasingly desirable as firms mature). In line with these predictions, empirical evidence shows that mature firms tend to pay out more (e.g., Fama and French [2001]; Grullon et al. [2002]; DeAngelo et al. [2006]). Therefore, dividends and share repurchases may convey information about the reduction of firms' growth opportunities and innovation potential. We test this hypothesis by examining the association between payouts and future investments in R&D. While we find a consistently negative association between share repurchases and R&D investments, we find no significant association between dividends and R&D. We interpret this evidence as inconsistent with the alternative explanation that innovative firms increase dividends when their innovation opportunities decline.

This study makes several contributions to the literature in accounting, finance, and economics. First, this study contributes to the literature that examines the forward-looking information conveyed by dividends. While prior studies examine the effect of payout policy on the ex-post realization of returns and earnings (e.g., Guay and Harford [2000]; Grullon and Michaely [2004]; Aggarwal et al. [2012]; Ham et al. [2020]), our setting can identify the effect of dividend increases on investors' beliefs related to firms' investments. By doing so, this study also responds to Farre-Mensa et al.'s [2014] call for a deeper investigation into the relationship between firms' investment and payout choices.

Second, we also contribute to the literature related to the choice of mix and form of payouts. Empirical evidence suggests that firms have gradually substituted share repurchases

for dividends, with the financial flexibility of repurchase programs being one of their key advantages (e.g., Grullon and Michaely [2002]; Jagannathan et al. [2000]; Skinner [2008]). However, the lower commitment associated with share repurchases also weakens their signaling power regarding future performance (e.g., Grullon and Michaely [2004]; Guay and Harford [2000]). Our results suggest a "reverse" substitution pattern in firms' life cycles following the resolution of uncertainty related to the investment process, complementing the findings of Kaplan and Pérez-Cavazos [2022]. While their research indicates that firms with strong growth opportunities avoid using dividends as a signaling mechanism, instead relying on alternative information channels, our findings suggest that in environments with high information asymmetry—where such alternative channels are limited due to the proprietary costs of disclosure—firms with strong growth opportunities adjust dividends based on the expected value of their current investments.

Third, this study contributes to the literature on the supply of and demand for information in innovative firms. While managers may refrain from disclosing detailed information about ongoing innovations to avoid benefiting competitors (e.g., Frankel et al. [2018]; Glaeser [2018]; Breuer et al. [2025]), investors strongly demand such information because assessing the extent to which current innovation will drive future profitability is challenging (e.g., Huang et al. [2021]; Martens [2023]; Baruffaldi et al. [2024]). We provide evidence that, in this setting, investors rely on dividends as a key source of information. Our findings reinforce prior research suggesting that dividends and share repurchases can serve as substitutes for accounting disclosures (e.g., Asquith and Mullins [1986]; Gelb [2000]). However, we argue that dividends, rather than share repurchases, fulfill this role in innovative firms.

Finally, we contribute to the literature examining patent valuations and the measurement of innovation quality. While prior studies have focused on the disclosure function

of patents (e.g., Glaeser et al. [2020]; Glaeser and Landsman [2021]) or on the determinants of innovation (e.g., Zhong [2018]; Kim and Valentine [2021]; Miller et al. [2022]; Goldman et al. [2024]), there is limited evidence regarding the interaction between corporate characteristics and patent valuations. This study extends this literature by demonstrating that dividends can credibly communicate the value of innovation to investors. In doing so, it enhances our understanding of how innovation quality is measured by showing that firm characteristics influence investors' beliefs about patent value and hence should be considered when evaluating innovation (e.g., Higham et al. [2021]).

3.2 RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

We develop three hypotheses that capture how managers determine the mix and form of payouts, how they respond to the resolution of innovation uncertainty, and how this, in turn, influences investors' beliefs. First, we expect innovative firms, on average, to favor the flexibility of share repurchases over the commitment of dividends due to the unpredictable nature of their investment needs. Second, we expect managers to shift their preference toward dividends once investment uncertainty is positively resolved. Third, we expect firms with more positive information about the value of current investments to pay higher dividends. Therefore, investors should assign a higher value to patents granted following dividend increases. In this section, we first review the literature on payout and investments, highlighting the advantages of the innovation setting in this context. We then formally develop each of the three hypotheses.

3.2.1 The Information Content of Payout and the Trade-Off between Flexibility and Commitment

The information content hypothesis suggests that, in the presence of asymmetric information, investors interpret payouts as a signal of management's views on a firm's future profitability (e.g., Miller and Modigliani [1961]; Bhattacharya [1979]; Miller and Rock [1985]; John and Williams [1985]). Specifically, dividend increases signal that managers have raised their expectations for future earnings, while the initiation of a share repurchase program

suggests that managers view the company's stock as undervalued at its current market price (see Ham et al. [2020] for a review of dividend increases and Bonaimé and Kahle [2024] for a review of share repurchases).

However, while both dividends and share repurchases can serve as credible market signals, share repurchases offer greater flexibility and require less commitment than dividend payments. Survey evidence shows that managers perceive share repurchases as more flexible (Brav et al. [2005]). Consistently, research findings suggest that firms are more likely to reduce share repurchases than dividend payments in difficult periods, and they typically distribute dividends from permanent earnings while relying on more transitory earnings for share repurchases (e.g., Guay and Harford [2000]; Lee and Suh [2011]; Floyd et al. [2015]).

Ultimately, the choice between dividends and share repurchases revolves around the trade-off between commitment and flexibility. Opting for a more flexible payout policy (i.e., prioritizing repurchases over dividends) enhances a firm's ability to invest in positive net present value projects as opportunities arise while reducing the risk of financial distress. Since dividend payments can impose financial constraints, favoring repurchases over dividends increases financial flexibility and serves as an operational hedge (Bonaimé et al. [2014]). On the other hand, adopting a more rigid payout policy (i.e., prioritizing dividends over repurchases) limits a firm's ability to pursue investment opportunities while strengthening the signaling power of its payout policy.

3.2.2 Dividends, Investment Opportunities and Innovation

The traditional signaling model of dividends suggests that less mature firms should be more willing to bear the costs of signaling (e.g., John and Williams [1985]). This prediction is difficult to reconcile with the empirical evidence that mature firms are more likely to pay dividends (e.g., Smith and Watts [1992]; Denis and Osobov [2008]). Recently, Kaplan and Pérez-Cavazos [2022] investigate this criticism by examining the association between

investment opportunities and the earnings information conveyed by dividends. Their empirical evidence suggests that, in a setting with multiple signals, profitable firms with low growth opportunities differentiate themselves from less profitable ones through the level of dividends, while profitable firms with high growth opportunities rely on alternative information channels to signal their quality.

Two gaps in this literature remain. First, it is unclear whether, in a setting with high information asymmetry and limited alternative signals, firms with high growth opportunities signal through dividends. Second, the existing literature fails to connect the resolution of investment uncertainty with payout decisions, as investment projects are not systematically disclosed and hence are difficult to compare across firms and over time.

The innovation setting and the U.S. patent system enable us to address these gaps. First, investors face uncertainty when assessing the value of innovation, as it is difficult to determine the extent to which current innovation will contribute to the firm's future profitability. Additionally, managers' voluntary disclosure channels are limited by the proprietary costs of disclosure, as revealing information about the implementation of current innovation in a firm's operations could benefit competitors (e.g., Frankel et al. [2018]; Glaeser [2018]; Breuer et al. [2025]). Second, USPTO systematically discloses firms' investment projects. Finally, Kogan et al. [2017] estimates the private economic value of each patent granted to public firms, allowing us to test how the uncertainty underlying the innovation process relates to firms' payout choices.

3.2.3 Hypotheses Development

We hypothesize that the trade-off between commitment and flexibility of payouts evolves around uncertainty in the investment process. When uncertainty is high, the benefits of flexibility are more pronounced, while the costs of commitment increase. As a result, distributing temporary excess cash through share repurchases becomes more advantageous, as

firms can easily scale back repurchases in response to changing financial needs. Since innovative firms often face unpredictable investment needs that depend on the resolution of uncertainty related to their innovation efforts, we expect that, on average, these firms will prefer share repurchases over dividends as a payout method.

H1: Innovative firms are more likely to pay out through share repurchases and less likely to pay out through dividends than non-innovative firms.

The positive resolution of uncertainty associated with investments in innovation may alter managers' approach to the trade-off between commitment and flexibility. As uncertainty decreases and expectations about future cash flows improve, the need for flexibility lessens, while the value of signaling positive information to the market increases. In this context, managers are likely to focus more on conveying stability and confidence in the firm's prospects. Consequently, we expect managers to increase their commitment to payouts by raising dividends and reducing share repurchases.

H2a: As the uncertainty related to investments in innovation resolves positively, innovative firms increase dividends and decrease share repurchases.

The type of innovation pursued by payout firms, typically mature firms, differs from that of non-payout firms, typically at an earlier stage of their life cycle. Specifically, mature firms tend to use existing technology and product lines to make incremental improvements for their current customer base, a process known as exploitative innovation (e.g., March [1992]; March [2003]; Allen et al. [2022]). Such exploitative innovation is likely to contribute to future profitability more quickly than explorative innovation. If managers increase dividends when they anticipate higher future cash flows from current innovation, we expect dividends to convey information about the profitability of such investments.

H2b: The presence and magnitude of dividends convey information about the profitability of current investments in innovation.

Once innovation uncertainty is resolved positively, investors must still evaluate the extent to which its innovation investments will contribute to the firm's future profitability. If an increase in dividends signals managers' expectations of higher future cash flow, we expect investors to incorporate this information into their valuation of the firm's innovation. Conversely, if share repurchases are primarily driven by temporary cash flows or short-term managerial incentives, investors should not consider them in their assessment of the firm's innovation.

H3a: Investors use dividend increase information to value firms' investments in innovation.

H3b: Investors do not use repurchase authorization information to value firms' investments in innovation.

3.3 DATA, DESCRIPTIVE STATISTICS AND IDENTIFICATION STRATEGY

3.3.1 Sample Construction Process and Descriptive Statistics

Table 3.1 outlines the sample construction process. We create three main samples: one at the firm-year level and two at the patent level. We then condition our primary firm-year sample based on various characteristics, depending on the hypothesis being tested.[41]

We construct our firm-year sample based on financial data from CRSP/Compustat merged dataset. We merge this data with patent data from Kogan et al. [2017] to create a firm-year level measure of patent value. We start our sample in 2004, the year the SEC Disclosure Rule on share repurchases took effect. This regulation, adopted by the U.S. Securities and Exchange Commission (SEC), enhanced transparency by requiring companies to disclose quarterly stock buybacks, allowing us to measure repurchase amounts at the annual level accurately.[42] We

[41] For instance, we use the full sample to examine differences in payout choices between innovative and non-innovative firms, while we use the subsample of innovative firms to examine how the resolution of innovation uncertainty is associated with firms' payout choices.

[42] Before the 2004 SEC Share Repurchase Disclosure Rule, it was difficult to calculate the exact amount of share repurchases from a company's financial statements. While some information was available, it was often incomplete or required indirect estimation from cash flow statements.

conclude our sample in 2022, since many of our tests require one year of forward-looking data. We restrict our sample to U.S. firms with ordinary common shares listed on the NYSE, AMEX, or Nasdaq, excluding those in the financial sector. These restrictions help control for the influence of foreign regulations, exchange-specific rules, and industry-related payout policies. This ensures that our analysis focuses on firms operating within a consistent regulatory framework. Our final sample consists of 51,340 firm-year observations, of which 28,984 pertain to innovative firms.[43] We use the full sample to examine differences between innovative and non-innovative firms (i.e., H1, Table 3.3), while we use the sample of innovative firms to examine variation in innovation uncertainty (i.e., H2, Tables 3.4 and 3.5).

Table 3.2 presents descriptive statistics. Since our main firm-level tests focus on variation within innovative firms, we provide descriptive statistics for firms that have received at least one patent in the sample period. Our empirical tests rely on an estimate of a firm's innovative output, which serves as a proxy for the resolution of uncertainty underlying investments in innovation. Following Kogan et al. [2017], we construct a firm-year variable that quantifies the total dollar value of a firm's successful innovations in a given year. Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date. We aggregate the total value of a firm's granted patents in the year and scale it by total assets. This approach offers a rough estimate of the unrecognized value of innovation investments on the balance sheet. We find that 63.71% of innovative firms receive at least one patent during the year, with the granted patents' dollar value averaging 11.88% of total assets. This percentage rises to 18.37% when considering only firms granted at least one patent in a year. On average, innovative firms distribute 2.64% of their total assets, either through dividends (1.44%) or share repurchases (1.20%).

[43] We define innovative firms as having at least one patent granted in the sample period.

We then construct two patent-level samples to examine whether investors use payout information when valuing patents (i.e., H3, Table 3.6). We start with our sample of innovative firms. We collect dividend declarations data from the CRSP events database, repurchase authorizations information from SDC Platinum, patent value information from Kogan et al. [2017], and patent characteristics data from various Patentsview databases. We limit our samples to those patents that have been granted either before or after a payout-related event ([-29, -2] and [+2, +29]). We select a 4-week time window for our pre-period and post-period to ensure a clean identification and to balance the number of potential grant days around the event.[44] We exclude a three-day time window around the payout event to mitigate any potential confounding effects of the market reacting to dividend or repurchase authorization announcements when valuing patents. Consistent with prior literature, we exclude dividend declarations for which the firm declared a distribution other than a quarterly dividend between the declaration dates of the current and prior quarterly dividends (e.g., Benartzi et al. [1997]; Nissim and Ziv [2001]) and firms that split their shares between the month of the prior dividend declaration and the month of the current dividend declaration (e.g., Nayak and Prabhala [2001]). We also exclude payout declarations around the 5-day window of an earnings announcement to mitigate confounding effects. Finally, we exclude patents with missing control variables (e.g., Dyer et al. [2024]). Our final sample of patents granted around a dividend increase (repurchase authorization) is 69,786 (51,148). We use these samples of patent grants to examine whether investors use payout information to value patents.

The distribution of the value of patents granted around dividend increases and repurchase authorizations is similar. Specifically, the mean of the natural logarithm of the dollar value of patents granted around dividend increases (repurchase authorizations) is 1.8976 (1.8829), while the median value is 0.9819 (0.9890). Patents granted around dividend increases are

[44] See Section 3.2 for additional details on the identification strategy.

almost equally distributed around the event (49.87% granted following dividend increases), while there are slightly more patents granted in the post-period for repurchase authorizations (54.08% granted following repurchase authorizations).

3.3.2 Identification Strategy

We leverage the features of the US patent setting to test whether investors incorporate payout information when valuing patents (i.e., H3). The key identifying assumption in this test is that the patent's grant date is plausibly exogenous to the firm, such that the timing of patent grants provides a plausibly exogenous source of variation in the extent of payout information available to investors.

While firms control the timing and decision to submit a patent application, the granting process is determined by the USPTO's review and approval procedures. This process involves multiple formal stages and interactions between the applicant and the examiner. On average, it takes approximately 24 months from the initial filing to either patent approval or application abandonment (United States Patent and Trademark Office [2020]). Given this extended timeline, firms have limited ability to strategically influence the timing of patent grant announcements. Consequently, the exact date a patent is granted and published in the Official Gazette is largely dictated by the USPTO's administrative processes, which are minimally affected by firm-specific actions, especially in short time windows (e.g., Ahci et al. [2021]).

Figure 3.1 illustrates the research design. If a patent is granted before a payout event, investors receive information exclusively about the positive resolution of innovation uncertainty. If a patent is granted after a payout event, investors gain insight not only about the positive resolution of innovation uncertainty but also about the firm's payout choice. This research design allows us to test whether investors incorporate dividend and/or share repurchase signals when valuing newly granted patents.

3.4 THE TRADEOFF BETWEEN COMMITMENT AND FLEXIBILITY AND THE RESOLUTION OF INNOVATION UNCERTAINTY

Hypotheses 1 and 2 suggest that, while innovative firms favor share repurchases over dividends to maintain flexibility in managing uncertain investment needs (i.e., H1), they increase payout commitment as uncertainty around their investments resolves positively (i.e., H2a). We test these hypotheses in two stages. First, we analyze whether innovative firms are more inclined to distribute payouts through repurchases rather than dividends compared to non-innovative firms. Second, we examine whether the resolution of uncertainty - measured by the value of patents granted - influences managers' choice between dividends and share repurchases.

3.4.1 Propensity to Payout: Innovative vs Non-Innovative Firms

We begin by examining whether innovative firms differ from non-innovative firms in their payout policies. To do this, we first compare the mean differences in the percentage of firms engaging in payouts, share repurchases, and dividend payments. Next, we analyze differences in the intensity of payout between the two groups.

Table 3.3 - Panel A presents the mean difference between innovative and non-innovative firms regarding their propensity to make payouts. We find that, while innovative firms are just as likely as non-innovative firms to make payouts, they differ in the method of distribution. Specifically, the percentage of firms that engage in some form of payout (i.e., either share repurchases or dividend payments) is 64.57% for innovative firms and 64.82% for non-innovative firms, with the difference being statistically insignificant. In contrast, 53.33% of innovative firms repurchase shares, compared to 46.40% of non-innovative firms, while 38.38% of innovative firms pay dividends, compared to 40.52% of non-innovative firms. Both differences are statistically significant, providing initial support for H1.

We then build on this initial descriptive evidence to assess whether these differences persist when analyzing variations in payout intensity. We use the following model to estimate the

relationship between the presence of innovation and the extent of total payouts, share repurchases, and dividend payments:

$$Payout\ Intensity\ Variable_y = \alpha + \beta_1\ Innovation\ Dummy_y + \ \Sigma Controls + \Sigma FE + \varepsilon \quad (3.1)$$

Where the Dependent Variable is either *Payout Intensity*, defined as the value of shares repurchased and ordinary dividend declared in the fiscal year scaled by total assets at the end of the prior fiscal year, *Repurchase Intensity*, defined as the value of shares repurchased in the fiscal year scaled by total assets at the end of the prior fiscal year, or *Dividend Intensity*, defined as the value of ordinary dividend declared in the fiscal year scaled by total assets at the end of the prior fiscal year. Our independent variable of interest is *Innovation Dummy*, a dummy variable that equals 1 if at least one patent has been granted to the firm during the fiscal year, and 0 otherwise. We control for firms' characteristics that impact the ability to pay out. Specifically, we control for market capitalization (*Size*), market-to-book ratio (*Market-to-Book*), total cash (*Cash*), Profitability (*ROA*), change in assets (*ΔAssets*), and capital expenditures (*CAPEX*). We include industry and year fixed effects, and we cluster standard errors by firm.

Table 3.3 – Panel B presents the results from estimating Equation (1). In Column (1), the coefficient on *Innovation Dummy* is negative and statistically significant, indicating that firms with at least one patent granted in the year have a total payout, scaled by total assets, that is 0.2% lower than firms that do not receive any patents in the year. Therefore, while the propensity to payout is not statistically different between innovative and non-innovative firms (Table 3 – Panel A), firms with granted patents in the year show a lower payout intensity. Columns (2) and (3) further explore this relationship. Column (2) shows a positive and statistically significant association between *Innovation Dummy* and *Repurchase Intensity* (0.002), while Column (3) reports a negative and statistically significant association between

Innovation Dummy and *Dividend Intensity* (-0.003). This suggests that the association observed in Column (1) is primarily driven by the reduced tendency of innovative firms to distribute earnings through dividends. Collectively, these findings indicate that innovative firms prefer the flexibility of share repurchases over the long-term commitment of dividend payments.

3.4.2 The Resolution of Innovation Uncertainty, Payouts, and Investments

We then investigate H2a, that is, whether the resolution of uncertainty underlying investments in innovation affects a firm's choice between share repurchases and dividends. We propose that, as innovation uncertainty decreases and expectations about future cash flows improve, the need for flexibility lessens, while the value of signaling positive information to the market increases. Therefore, we expect managers to increase dividends while decreasing share repurchases. To test this hypothesis, we analyze the following model:

$$Payout\ or\ CAPEX\ Intensity\ Variable_{y+1} = \alpha + \beta_1\ Innovation\ Value_y + \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (3.2)$$

While Equation (1) focuses on the cross-sectional differences in payout intensity between innovative and non-innovative firms, Equation (2) examines the variation within innovative firms based on the value of patents granted (i.e., the positive resolution of uncertainty). Therefore, we make the following modifications to the previous model. First, our independent variable of interest is now *Innovation Value*, which is defined as the dollar value of patents granted to the firm during the fiscal year, scaled by total assets at the end of the prior fiscal year. Second, the dependent variable is measured one year ahead to assess managers' choices following the resolution of innovation uncertainty. Additionally, we include *CAPEX Intensity* as a dependent variable, defined as capital expenditures in the current fiscal year scaled by total assets at the end of the prior fiscal year, to examine how payout decisions relate to investment needs to develop and/or commercialize the patents. Finally, we replace industry fixed effects with firm fixed effects, as the current analysis focuses on within-firm variation.

Table 3.4 presents the results from estimating Equation (2). Column (1) reports the association between *Innovation Value*$_y$ and *Repurchase Intensity*$_{y+1}$. The coefficient of *Innovation Value* is negative and statistically significant, suggesting that firms reduce their repurchases following the grants of valuable patents. In Column (2), we examine whether the resolution of innovation uncertainty is associated with additional investments. The positive and significant association between *Innovation Value*$_y$ and *CAPEX Intensity*$_{y+1}$ suggests that managers reduce share repurchases to finance new investment opportunities arising from granted patents.

We then examine whether the relationship between innovation value and share repurchases differs within the subsample of firms that pay dividends. If the resolution of innovation uncertainty influences managers' choices regarding the mix and form of payouts, due to a reduced need for flexibility and greater benefits of commitment, we expect the reduction in share repurchases to be more pronounced in the subsample of innovative firms that pay dividends. Consistent with this hypothesis, the coefficient on *Innovation Value* in Column (3) (-0.010) is twice as large in absolute terms and statistically significantly different from the coefficient in Column (1) (-0.005). The results in Column (4) further suggest that the greater reduction in share repurchases among dividend-paying firms is offset by an increase in dividend payouts. Overall, these findings indicate that managers commit to higher dividends once the uncertainty surrounding the innovation process is resolved, financing the increase in dividends by reducing share repurchases.

3.5 PAYOUT METHOD, INVESTMENT PROFITABILITY AND INVESTORS' BELIEFS

The granting of valuable patents does not eliminate the information asymmetry between insiders and outsiders, as it remains challenging for investors to assess the extent to which successful innovation will contribute to the firm's future profitability (e.g., Huang et al. [2021]; Martens [2023]; Baruffaldi et al. [2024]). If managers increase dividends when they anticipate

higher future cash flows from current innovation, we expect dividends to moderate the relationship between current innovation and future profitability (i.e., H2b). If this is the case, we expect investors to incorporate this information into their valuation of patents (i.e., H3a). Conversely, if share repurchases are primarily driven by temporary cash flows or short-term managerial incentives, investors should not view them as a meaningful signal when assessing the firm's innovation (i.e., H3b). In this section, we first test whether dividends moderate the relationship between current innovation and future profitability. Then we examine whether investors use payout-related information to value patents.

3.5.1 Payouts, Innovation and Future Profitability

We test H2b by examining how the value of innovation in the current year correlates with profitability in the subsequent year across various subsamples of innovative firms that pay out. Specifically, we estimate the following model in a subsample of dividend-paying firms and in a subsample of firms that only pay out through repurchases (i.e., non-dividend paying firms):[45]

$$ROA_{y+1} = \alpha + \beta_1 \, Innovation\, Value_y + \ \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (3.3)$$

Table 3.5 reports the results from estimating Equation (3). Column (1) shows that for dividend-paying firms, innovation value has a positive and statistically significant effect on future profitability (0.025). This suggests that innovative investments are associated with improved future performance among firms that distribute dividends. In contrast, Column (2) shows that for firms that pay out through repurchases only, innovation value does not have a significant relationship with future profitability. Columns (3) and (4) further explore this relationship by splitting the sample of dividend-paying firms into high and low dividend intensity groups. Column (3) shows that the effect of innovation on future profitability is stronger in the subsample of high dividend intensity (0.050), while Column (4) reveals a

[45] We do not examine firms that pay dividends but do not repurchase, as firms that only pay dividends are largely extinct (Skinner [2008]).

weaker and statistically insignificant effect for firms with low dividend intensity (0.010). Columns (5) and (6) examine the relationship between innovation value and future profitability within the subsample of firms that rely solely on share repurchases, based on their repurchase intensity. Column (5) shows that for firms with high repurchase intensity, innovation value is not significantly related to future ROA (-0.009). However, Column (6) indicates that for firms with low repurchase intensity, innovation value has a weak but positive relationship with future profitability (0.023). Overall, these results are consistent with H2b, that is, managers adjust dividends based on the expected profitability of current innovation, but they do not do so with share repurchases.

3.5.2 Investors' Beliefs, Dividends and Share Repurchases

Managers' payout choices following patent grants (i.e., Table 3.4) and the moderating role of dividends in the association between current innovation and future profitability (i.e., Table 3.5) suggest that payout-related events convey varying degrees of information value. We explore these dynamics by examining whether investors use payout information when valuing patents. We test this hypothesis by exploiting the plausibly exogenous source of variation in the extent of payout information (i.e., dividend increases and repurchase authorizations) available to investors. If a patent is granted within four weeks before a payout event, investors receive information exclusively about the positive resolution of innovation uncertainty. If a patent is granted within four weeks after a payout event, investors gain insight not only about the positive resolution of innovation uncertainty but also about the firm's payout choice.[46]

We argue that the uncertainty underlying the innovation process and the commitment implied by the payout policy jointly affect investors' valuation of a firm's patent. Therefore, we expect investors to update their valuation of patents following dividend increases (i.e., H3a). We test this hypothesis by estimating the following model:

[46] See Section 3.2 and Figure 1 for additional details on the identification strategy.

$$Patent\ Valuation\ Div\ Incr = \alpha + \beta_1\ Post\ Div\ Incr + \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (3.4)$$

The dependent variable, *Patent Valuation Div Incr,* is the natural logarithm of the Kogan et al. [2017] patent valuation measure for patents granted in the eight weeks around a dividend increase.[47] Table 3.6 – Panel A reports the result from estimating equation (3.4). Column (1) provides baseline results, showing that *Post Div Incr*, a dummy variable indicating whether a patent is granted after a dividend increase, is positively associated with patent valuation (0.103), suggesting that investors value more patents granted following a dividend increase. Column (2) introduces firm fixed effects, reducing the magnitude of the coefficient to 0.069 while maintaining significance, implying that within-firm variation still supports the positive association. Results are robust to the inclusion of firm and patent controls in Column (3) and to isolating variation within the eight weeks around a dividend increase event in Column (4).[48]

To corroborate our evidence on the differential information value of dividends and share repurchases, we test whether investors update their beliefs following repurchase authorizations, estimating the following model:

$$Patent\ Valuation\ Rep\ Auth = \alpha + \beta_1\ Post\ Rep\ Auth + \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (3.5)$$

The dependent variable, *Patent Valuation Rep Auth*, is the natural logarithm of the Kogan et al. [2017] patent valuation measure for patents granted in the eight weeks around a repurchase authorization.[49] Table 3.6 – Panel B reports the results from estimating Equation (5). Column (1) provides baseline results, showing that *Post Rep Auth*, a dummy variable indicating whether a patent is granted after a share repurchase authorization, is not significantly associated with patent valuation. The coefficient is negative (-0.066) but statistically insignificant, suggesting no strong effect of repurchase authorizations on patent value. Column (2) introduces firm fixed effects, and the result remains statistically insignificant. Results

[47] Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date.
[48] In untabulated analysis, the results remain robust to a difference-in-differences specification using no change in dividend declarations as a control group and are stronger for larger dividend increases.
[49] Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date.

remain insignificant with the inclusion of firm and patent controls in Column (3) and with the isolation of variation within the eight weeks around a repurchase authorization event in Column (4). Overall, unlike dividend increases, repurchase authorizations do not appear to influence patent valuations.

3.6 PAYOUT POLICY AND FUTURE INVESTMENTS IN INNOVATION

Finally, we examine whether dividends and share repurchases have a different association with future investments in early-stage innovation. Our results suggest that dividends convey actionable information about the value of current investments, while share repurchases are more closely related to a reduction in growth opportunities. Therefore, we expect share repurchases to be negatively associated with future investments in early-stage innovation, while we do not anticipate a significant association for dividends. We test this hypothesis by employing the following model:

$$R\&D\ Intensity_{y+1} = \alpha + \beta_1\ Repurchase\ Intensity_y + \beta_2\ Dividend\ Intensity_y + \Sigma\text{Controls} + \Sigma\text{FE} + \varepsilon \quad (3.6)$$

The dependent variable, *R&D Intensity*, is defined as R&D expenditures in the current fiscal year scaled by total assets at the end of the prior fiscal year. Table 3.7 reports the results from estimating Equation (3.6). Columns (1) and (2) analyze the sample of innovative firms, while Columns (3) and (4) restrict the sample to dividend-paying innovative firms. In all specifications, *Repurchase Intensity* is negatively associated with future R&D intensity, with statistically significant coefficients across both the full and restricted sample of dividend-paying firms. In contrast, *Dividend Intensity* does not exhibit a significant relationship with future R&D investments, as evidenced by its small and statistically insignificant coefficients across all models. These results suggest that while share repurchases may signal a reduction in growth opportunities, dividends do not appear to be associated with firms' future R&D expenditures. We interpret this evidence as supporting our findings that managers adjust

dividends based on expected future cash flows from current investments, rather than in response to a reduction in growth opportunities.

3.7 CONCLUSION

Our findings provide new insights into the role of payout policy in shaping investors' beliefs related to firms' investments. We document that while innovative firms favor share repurchases over dividends due to their flexibility, they shift towards dividends following the resolution of investment uncertainty. This shift signals managerial confidence in current investments and is rewarded with higher patent valuations from investors.

We highlight dividends as a credible signaling mechanism in environments with high information asymmetry and high cost of alternative signaling channels (e.g., high proprietary costs of disclosure), contributing to the literature examining how investments and payout interact to signal future earnings (e.g., Kaplan and Pérez-Cavazos [2022]). By linking payout decisions to the valuation of innovative output, we offer a novel perspective on the interaction between dividends, share repurchases, and firms' investments, suggesting that the choice between payout methods is closely linked with the uncertainty underlying current investments. Our findings align with signaling models in which reputational concerns deter less profitable firms from mimicking dividend policies of more profitable ones (e.g., Kalay [1980]; Baker et al. [2016]; Wu [2018]). In this framework, managers expecting higher future cash flow from current investments can increase dividends to optimize cash flow management while simultaneously conveying valuable information to investors, without incurring a deadweight cost in providing such a signal.

Finally, while the plausibly exogenous nature of a patent's grant date enables us to analyze whether investors incorporate payout information when valuing patents, it does not allow us to determine whether managers strategically time dividend changes to signal the value of innovation - an analysis that would naturally follow from our findings. This limitation arises

because firms have minimal control over the timing of patent grants, whereas quarterly dividend declarations typically follow predetermined schedules.

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3.9 APPENDIXES

Appendix 3.A: Variable Definition

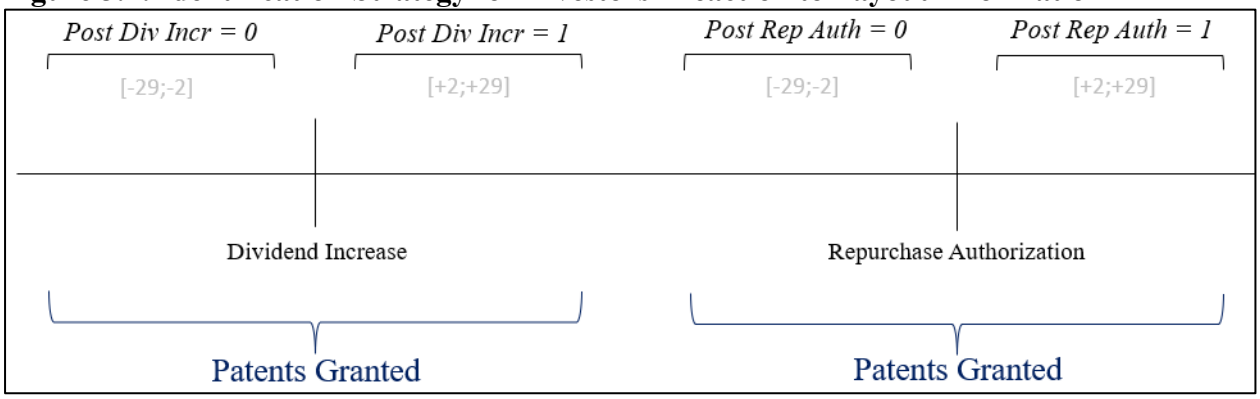
Variable Name	*Variable Definition*	*Data Sources*
Outcome Variables		
Payout	Indicator variable equal to one if the firm repurchases shares and/or declares ordinary dividends in the fiscal year, and zero otherwise	Compustat
Repurchase Stocks	Indicator variable equal to one if the firm repurchases shares in the fiscal year, zero otherwise	Compustat
Pay Dividends	Indicator variable equal to one if the firm declares ordinary dividends in the fiscal year, zero otherwise	Compustat
Payout Intensity	The value of shares repurchased and ordinary dividend declared in the fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
Repurchase Intensity	The value of shares repurchased in the fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
Dividend Intensity	The value of ordinary dividends declared in the fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
CAPEX Intensity	Capital expenditures in the current fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
R&D Intensity	R&D expenditures in the current fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
ROA	Operating income in the current fiscal year scaled by total assets at the end of the prior fiscal year.	Compustat
Patent Valuation Div Incr	The natural logarithm of the Kogan et al. [2017] patent valuation measure for patents granted in the 8 weeks around a dividend increase. Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date.	Kogan et al. [2017]
Patent Valuation Rep Auth	The natural logarithm of the Kogan et al. [2017] patent valuation measure for patents granted in the 8 weeks around a repurchase authorization. Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date.	Kogan et al. [2017]
Independent Variables of Interest		
Innovation Dummy	Indicator variable equal to one if at least one patent has been granted to the firm during the fiscal year, and zero otherwise.	Kogan et al. [2017]
Innovation Value	The measure of a firm's innovative output, which serves as a proxy for the resolution of uncertainty underlying investments in innovation. Following Kogan et al. [2017], we construct a firm-year variable that quantifies the total dollar value of a firm's successful innovations in a given year. Kogan et al. [2017] estimate each patent's dollar value based on the stock market reaction at the grant date. We aggregate the total value of a firm's granted patents in the year and scale it by total assets at the end of the prior fiscal year.	Kogan et al. [2017]
High Div Intensity	Indicator variable equal to one if the current dividend intensity is higher than the firm's median value, and zero otherwise.	Compustat
High Repurchase Intensity	Indicator variable equal to one if the current repurchase intensity is higher than the firm's median value, and zero otherwise.	Compustat
Post Div Incr	Indicator variable equal to one if the patent is granted after a dividend increase declaration, and zero otherwise.	CRSP
Post Rep Auth	Indicator variable equal to one if the patent is granted after a repurchase authorization, and zero otherwise.	SDC Platinum

Appendix A (Continued)

Variable Name	*Variable Definition*	*Data Sources*
Firm Level Control Variables		
Size	The natural logarithm of the market value of equity at the end of the prior fiscal year.	Compustat
Market-to-Book	The natural logarithm of one plus the firm's market-to-book ratio at the end of the prior fiscal year.	Compustat
Cash	Total cash holdings scaled by total assets at the end of the prior fiscal year.	Compustat
ΔAssets	The percentage change in total assets in the fiscal year.	Compustat
Patent Level Control Variables		
Grant lag	The difference between the grant date and the filing date of the patent, divided by 365.	Patentsview
Forward citations	The natural logarithm of one plus the number of forward patent citations (i.e., the citations received by other patents).	Patentsview
Backward citations	The natural logarithm of one plus the number of backward patent citations (i.e., the citations made to other patents).	Patentsview
Independent claims	The natural logarithm of one plus the number of independent claims included in the patent.	Patentsview
Figures	The natural logarithm of one plus the number of figures included in the patent.	Patentsview
Generality	The Trajtenberg et al. [1997] generality measure.	Patentsview

3.10 FIGURES

Figure 3.1: Identification Strategy for Investors' Reaction to Payout Information



Notes: Figure 3.1 displays the identification strategy to test Hypothesis 3 in Table 6.

3.11 TABLES

Table 3.1: Sample Selection

Firm-Year Sample (2004-2022)		
	# Firm – Year	*Unique Firms*
Full Sample (No missing variables, no financials and utilities)	51,340	5,440
Innovative Firms (at least one patent granted in the sample period)	28,984	2,787
Dividend-Paying Innovative Firms	15,330	1,108
Firm-Year Observations with positive ordinary dividends	10,295	1,108
Frim-Year Observations with positive share repurchases and no ordinary dividends	6,848	1,737

Patent Level Samples (2004-2022)		
	# Patents	*Unique Firms*
Patents granted in the 8 weeks window around a Dividend Increase	69,786	249
Patents granted in the 8 weeks window around a Repurchase Authorization	51,148	667

Notes: Table 3.1 outlines the construction of the main sample used in the analysis. We exclude financial firms and utility firms and only retain firm-years with data available on Compustat between fiscal years 2004 and 2022.

Table 3.2: Descriptive Statistics

Variable	N	Mean	Standard Deviation	p25	p50	p75
Firm-Year Variables						
Innovation Dummy	28,984	0.6371	0.481	0.0000	1.0000	1.0000
Innovation Value	28,984	0.1188	0.2506	0.0000	0.0125	0.1074
Repurchase Intensity	28,984	0.0120	0.0252	0.0000	0.0000	0.0151
Dividend Intensity	28,984	0.0144	0.0283	0.0000	0.0000	0.0163
Size	28,984	7.0325	2.3047	5.3648	6.9997	8.6824
Market-to-Book	28,984	1.6381	1.3379	0.9208	1.2901	1.8106
Cash	28,984	0.2501	0.2350	0.0663	0.1681	0.3703
ROA	28,984	0.0104	0.2333	-0.0217	0.0664	0.1267
ΔAssets	28,984	0.1106	0.3569	-0.0431	0.0436	0.1593
CAPEX Intensity	28,984	0.0423	0.0482	0.0140	0.0276	0.0523
R&D Intensity	28,984	0.0861	0.1295	0.0014	0.0320	0.1126
Patent Level Variables - Dividend Increase Declarations						
Patent Valuation Div Incr	69,786	1.8976	1.2331	0.9819	1.8617	2.6993
Post Div Incr	69,786	0.4987	0.5000	0.0000	0.0000	1.0000
Patent Level Variables - Repurchase Authorization Declarations						
Patent Valuation Rep Auth	51,148	1.8829	1.5785	0.9890	1.9143	2.9569
Post Rep Auth	51,148	0.5408	0.4983	0.0000	1.0000	1.0000
Patent Level Variables - Control Variables						
Grant lag	120,934	3.2261	1.7506	2.0164	2.8932	4.0685
Forward citations	120,934	1.0793	1.1936	0.0000	0.6931	1.7918
Backward citations	120,934	1.9859	1.3262	1.0986	1.9459	2.7726
Independent claims	120,934	1.1148	0.5722	0.6931	1.3863	1.3863
Figures	120,934	2.2259	0.8067	1.7918	2.1972	2.7081
Generality	120,934	0.2133	0.2097	0.0000	0.1978	0.4055

Notes: Table 3.2 presents descriptive statistics. All variables are defined in Appendix A.

Table 3.3: Propensity to Payout via Share Repurchases and Dividends

Panel A: Innovative Firms vs Non-innovative Firms

	Payout (1/0)	
	N	*Mean*
Innovative firms	28,984	0.6457
Non-innovative firms	22,356	0.6482
Difference in Means		0.0025
t-test p-value		0.2818
	Repurchase Stocks (1/0)	
	N	*Mean*
Innovative firms	28,984	0.5333
Non-innovative firms	22,356	0.4640
Difference in Means		-0.0693
t-test p-value		< 0.001
	Pay Dividends (1/0)	
	N	*Mean*
Innovative firms	28,984	0.3838
Non-innovative firms	22,356	0.4052
Difference in Means		0.0214
t-test p-value		< 0.001

Panel B: Innovation and Payout Intensity

Dependent Variable	*Payout Intensity* $_y$	*Repurchase Intensity* $_y$	*Dividend Intensity* $_y$
	(1)	(2)	(3)
Innovation Dummy $_y$	***-0.002****	***0.002*****	***-0.003*****
	(-2.357)	***(3.272)***	***(-4.778)***
Size $_y$	0.004***	0.002***	0.002***
	(19.189)	(18.831)	(10.463)
Market-to-Book $_y$	0.003***	0.001***	0.002***
	(8.124)	(2.591)	(6.787)
Cash $_y$	0.018***	0.002**	0.014***
	(7.604)	(2.251)	(6.659)
ROA $_y$	0.054***	0.017***	0.034***
	(17.783)	(16.168)	(13.018)
ΔAssets $_y$	-0.009***	-0.006***	-0.002***
	(-11.645)	(-16.738)	(-4.174)
CAPEX Intensity $_y$	-0.027***	-0.023***	-0.003
	(-4.742)	(-7.493)	(-0.642)
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	51,340	51,340	51,340
Adjusted R-squared	0.187	0.112	0.134

Notes: Table 3.3 reports the association between innovation and firms' payout choices using OLS regressions and the full sample of innovative and non-innovative firms. Panel A provides cross-sectional differences in the propensity to pay out between innovative and non-innovative firms. Innovative firms are defined as firms receiving at least one patent in the sample period. Panel B examines the association between the presence of innovation and firms' payout intensity. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 3.4: Innovation Value and Payout Intensity

	Innovative Firms		Dividend-Paying Innovative Firms	
Dependent Variable	*Repurchase Intensity* $_{y+1}$	*CAPEX Intensity* $_{y+1}$	*Repurchase Intensity* $_{y+1}$	*Dividend Intensity* $_{y+1}$
	(1)	(2)	(3)	(4)
Innovation Value $_{y}$	***-0.005****	***0.005****	***-0.010****	***0.005****
	(-4.157)	***(2.846)***	***(-4.320)***	***(2.018)***
Size $_{y}$	0.001**	0.003***	0.001	0.003***
	(2.064)	(6.034)	(1.206)	(6.256)
Market-to-Book $_{y}$	-0.002***	0.002***	-0.003***	0.000
	(-9.236)	(7.054)	(-7.190)	(0.928)
Cash $_{y}$	0.010***	0.018***	0.019***	0.020***
	(6.367)	(7.625)	(5.869)	(5.503)
ROA $_{y}$	0.008***	0.015***	0.020***	0.038***
	(6.311)	(5.263)	(5.430)	(7.197)
ΔAssets $_{y}$	-0.002***	-0.008***	-0.003***	-0.008***
	(-3.947)	(-9.303)	(-3.329)	(-6.340)
CAPEX Intensity $_{y}$	-0.015***	0.399***	-0.018**	-0.016**
	(-3.443)	(24.256)	(-2.510)	(-2.003)
R&D Intensity $_{y}$	0.002	0.027***	-0.005	0.004
	(0.689)	(4.207)	(-0.660)	(0.309)
Repurchase Intensity $_{y}$	0.196***	0.000	0.230***	0.015*
	(17.072)	(0.047)	(16.568)	(1.756)
Dividend Intensity $_{y}$	-0.048***	0.040**	-0.050***	0.335***
	(-4.829)	(2.493)	(-4.908)	(12.278)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	28,984	28,984	15,330	15,330
Adjusted R-squared	0.349	0.644	0.343	0.590

Notes: Table 3.4 reports the association between innovation value and firms' payout and investment policy. Columns 1 and 2 examine the association between innovation value in the current year and repurchase intensity (Column 1) and CAPEX intensity (Column 2) in the following year using the sample of innovative firms. Columns 3 and 4 examine the association between innovation value in the current year and repurchase intensity (Column 3) and dividend intensity (Column 4) in the following year in the sample of dividend-paying innovative firms. Innovative firms are defined as firms receiving at least one patent in the sample period. Dividend-paying innovative firms are defined as also paying ordinary dividends at least once in the sample period. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 3.5: Innovation Value and Future Profitability

Dependent Variable	ROA_{y+1}					
	Payout Firms		Div Payers		Non-Div Payers	
	Div Payers	Non-Div Payers	High Div Int	Low Div Int	High Rep Int	Low Rep Int
	(1)	(2)	(3)	(4)	(5)	(6)
Innovation Value $_y$	***0.025******	***0.010***	***0.050******	***0.010***	***-0.009***	***0.023****
	(3.534)	***(0.951)***	***(3.131)***	***(1.307)***	***(-0.433)***	***(1.923)***
Size $_y$	0.005***	0.008**	0.008**	0.005**	0.010	0.004
	(2.645)	(2.426)	(2.489)	(2.128)	(1.585)	(1.199)
Market-to-Book $_y$	0.009***	0.009***	0.006***	0.012***	0.011***	0.010***
	(6.219)	(5.282)	(3.761)	(5.121)	(3.618)	(4.980)
Cash $_y$	0.030**	-0.008	0.045	0.017	0.021	-0.016
	(2.304)	(-0.512)	(1.501)	(1.207)	(0.790)	(-0.808)
ROA $_y$	0.568***	0.533***	0.501***	0.515***	0.420***	0.582***
	(21.381)	(15.775)	(9.912)	(14.455)	(5.533)	(16.807)
ΔAssets $_y$	-0.043***	0.006	-0.046***	-0.031***	0.014	-0.009
	(-8.755)	(0.624)	(-7.701)	(-3.287)	(0.699)	(-0.997)
CAPEX Intensity $_y$	-0.049	-0.061	-0.062	-0.051	-0.100	-0.026
	(-1.240)	(-1.323)	(-0.824)	(-0.934)	(-1.059)	(-0.472)
R&D Intensity $_y$	0.097*	-0.143*	0.165	-0.008	-0.104	-0.080
	(1.808)	(-1.762)	(1.492)	(-0.118)	(-0.759)	(-0.809)
Repurchase Intensity $_y$	0.065***	0.021	0.064*	0.075**	0.063	0.193
	(2.646)	(0.600)	(1.823)	(2.318)	(0.847)	(1.328)
Dividend Intensity $_y$	0.116**		0.135	0.092		
	(2.419)		(1.417)	(0.522)		
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	10,295	6,848	4,858	5,437	3,125	3,723
Adjusted R-squared	0.719	0.813	0.756	0.675	0.883	0.781

Notes: Table 3.5 reports the association between innovation value and future profitability using OLS regressions in different samples of innovative firms that pay out. In Columns 1 and 2, we condition on firms paying out, and we split the sample into firms that pay dividends (Column 1) and firms that do not pay dividends but repurchase shares (Column 2). In Columns 3 and 4, we condition on firms paying dividends, and we split the sample into high-dividend intensity vs low-dividend intensity. Similarly, in Columns 5 and 6, we condition on firms not paying dividends but repurchasing shares, and we split the sample into high-repurchase intensity vs low-repurchase intensity. We split the samples based on the firm's median value of dividend intensity (Columns 3-4) and the firm's median value of repurchase intensity (Columns 5-6). All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 3.6: Investors' Valuation of Patents Granted Around Payout-Related Events

Panel A: Investors' Valuation of Patents Granted Around a Dividend Increase

Dependent Variable	*Patent Valuation Div Incr*			
	Patents Granted Around Dividend Increases			
	(1)	(2)	(3)	(4)
Post Div Incr	***0.103****	***0.069****	***0.069****	***0.064****
	(2.688)	***(2.910)***	***(3.150)***	***(2.964)***
Size	0.072		0.639***	
	(1.486)		(9.886)	
Market-to-Book	-0.093***		0.049*	
	(-2.649)		(1.906)	
Cash	2.355***		0.021	
	(4.674)		(0.057)	
ROA	4.580***		1.051	
	(3.254)		(1.479)	
ΔAssets	0.251		-0.186	
	(0.422)		(-1.031)	
CAPEX Intensity	4.441***		4.070***	
	(4.915)		(4.323)	
R&D Intensity	-11.802***		-5.252**	
	(-8.012)		(-2.429)	
Repurchase Intensity	-4.606***		-1.353	
	(-3.229)		(-1.234)	
Dividend Intensity	0.560		-6.538***	
	(0.179)		(-2.807)	
Grant lag			0.010**	0.002**
			(2.493)	(1.978)
Forward citations			0.057***	0.001
			(5.181)	(0.423)
Backward citations			-0.012*	0.002
			(-1.738)	(1.404)
Independent claims			-0.179***	-0.001
			(-4.696)	(-0.140)
Figures			0.002	0.007***
			(0.356)	(3.265)
Generality			-0.005	0.001
			(-0.352)	(0.086)
Firm FE	NO	YES	YES	NO
Firm X Payout Event FE	NO	NO	NO	YES
Observations	69,786	69,786	69,786	69,786
Adjusted R-squared	0.219	0.759	0.815	0.926

Panel B: Investors' Valuation of Patents Granted Around a Repurchase Authorization

Dependent Variable	*Patent Valuation Rep Auth*			
	Patents Granted Around Repurchase Authorization			
	(1)	(2)	(3)	(4)
Post Rep Auth	***-0.066***	***0.046***	***0.040***	***0.031***
	(-0.625)	***(1.096)***	***(1.182)***	***(1.490)***
Size	0.190***		0.665***	
	(3.373)		(10.885)	
Market-to-Book	0.175**		0.160***	
	(2.012)		(4.215)	
Cash	2.421***		0.702**	
	(4.106)		(2.409)	
ROA	5.562***		0.766	
	(5.970)		(1.388)	
ΔAssets	1.131**		0.204	
	(2.450)		(1.129)	
CAPEX Intensity	7.976***		5.038***	
	(3.098)		(2.902)	
R&D Intensity	-4.311***		0.518	
	(-3.507)		(0.449)	
Repurchase Intensity	0.723		-0.000	
	(0.273)		(-0.000)	
Dividend Intensity	-5.048		-8.448***	
	(-1.509)		(-4.657)	
Grant lag			0.011***	0.002**
			(2.835)	(2.490)
Forward citations			0.041***	0.001
			(4.960)	(0.418)
Backward citations			-0.012*	0.000
			(-1.925)	(0.074)
Independent claims			-0.161***	-0.005
			(-3.851)	(-0.810)
Figures			0.015	-0.001
			(1.448)	(-0.423)
Generality			-0.025	-0.016*
			(-1.358)	(-1.790)
Firm FE	NO	YES	YES	NO
Firm X Payout Event FE	NO	NO	NO	YES
Observations	51,148	51,148	51,148	51,148
Adjusted R-squared	0.251	0.862	0.895	0.955

Notes: Table 3.6 presents the results of investors' valuation of patents granted around dividend increases (Panel A) and repurchase authorizations (Panel B). We limit our samples to those patents that have been granted either before or after a payout-related event ([-29, -2] and [+2, +29]). If a patent is granted within four weeks before a payout event, investors receive information exclusively about the positive resolution of innovation uncertainty. If a patent is granted within four weeks after a payout event, investors gain insight not only about the positive resolution of innovation uncertainty but also about the firm's payout choice. See Section 3.2 and Figure 1 for additional details on the identification strategy. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm-payout event level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 3.7: Payout Choices and Future Growth Opportunities

Dependent Variable	*R&D Intensity* $_{y+1}$			
	Innovative Firms		Dividend-Paying Innovative Firms	
	(1)	(2)	(3)	(4)
Repurchase Intensity $_y$	**-0.045*** **	**-0.045*** **	**-0.015** **	**-0.016** **
	(-5.222)	**(-5.216)**	**(-2.491)**	**(-2.474)**
Dividend Intensity $_y$		**-0.009**		**-0.016**
		(-0.329)		**(-0.563)**
Size $_y$	-0.002**	-0.002**	-0.001	-0.001
	(-2.216)	(-2.190)	(-1.047)	(-0.974)
Market-to-Book $_y$	0.003***	0.003***	0.001***	0.001***
	(7.040)	(6.975)	(2.837)	(2.750)
Cash $_y$	0.025***	0.025***	0.011	0.011
	(4.992)	(5.009)	(1.478)	(1.506)
ROA $_y$	-0.003	-0.003	-0.013	-0.012
	(-0.539)	(-0.516)	(-1.419)	(-1.304)
ΔAssets $_y$	-0.059***	-0.059***	-0.023***	-0.023***
	(-24.072)	(-24.070)	(-7.410)	(-7.403)
CAPEX Intensity $_y$	0.103***	0.103***	0.043***	0.043***
	(8.870)	(8.865)	(3.537)	(3.528)
R&D Intensity $_y$	0.566***	0.566***	0.567***	0.567***
	(29.122)	(29.110)	(10.719)	(10.747)
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	28,984	28,984	15,330	15,330
Adjusted R-squared	0.883	0.883	0.860	0.860

Notes: Table 3.7 reports the association between payout intensity and future R&D investments using OLS regressions. Columns 1 and 2 use the sample of innovative firms. Columns 3 and 4 use the sample of dividend-paying innovative firms. All variables are defined in Appendix A. T-statistics, reported in parentheses, are based on standard errors clustered at the firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.